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Represented is an investigation designed to give insight to the immediate and eventual consequences of existing patterns of educational support and a method for laying suitable foundations for accurate analysis of impact by any state in accordance with each of the several types of state support and in terms of collateral effects in public finance. Conclusions show that inequalities in opportunities to children and tax inequities to parents continue to exist in most states. Although the financing of local education and the financing of local government serve the same population, each is considered in isolation. While the state support program studied has tended to equalize educational opportunities, it was found that there is a failure to recognize the inadequacies of present measures of the fiscal capacity of communities and a tendency to ignore the complex nature of the educational responsibility of a community. Numerous charts and tables accompany the text, including data forms.

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ECONOMIC IMPACT OF STATE SUPPORT MODELS ON EDUCATIONAL FINANCE

COOPERATIVE RESEARCH PROJECT NO. 1495

LeROY J. PETERSON
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THE UNIVERSITY OF WISCONSIN

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Cooperative Research Project No. 1495

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Richard A. Rossmiller
Stewart D. North
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The University of Wisconsin
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Madison, Wisconsin
1963

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CHAPTER I

INTRODUCTION

"If we could first see where we are and whither we are tending, we would better judge what to do and how to do it." -- A. LINCOLN

Fiscal support of public education has risen sharply in recent years. This increase while inescapably geared to inflation, a growing enrollment, and an enlarging economy is the product of other significant factors. The avenues to desirable vocations are now constructed from longer periods of formal study. The populace is becoming insistent upon a wider array of educational services. Many of these newer services are expensive. The current and anticipated numbers of persons being educated are much larger proportionately than formerly. Not only are the totals larger, but the percentages of age groups included are also substantially greater. Thus, the demand for more education for more persons for more reasons has rapidly outmoded once useful solutions to increased costs. Linked to the extended interest in education is the characteristic mobility of our people. Birth and death are spanned by many miles, and people in unprecedented numbers actively search for opportunities. They move, far and often, to find those opportunities -- and they use education as the means to lay hold on them.

Statement of the Problem

Governmental costs of all types, education included, have become burdensome to many localities and as a result they have looked more and more to sources outside the local district. Support has shifted to larger taxing units. This shifting support pattern is provoking concern regarding the suitability of existing state support programs and is stimulating reexamination of them in the light of increased pressure for more outside support and of developments such as the following:

1. the sharp reduction in numbers of local school districts
2. the appearance of wealth and income in a variety of new forms
3. the emergence of new revenue patterns
4. the persistence of inequities in spite of substantial increases in state support
5. the exaggeration of inequities through supplementary programs of school support at all levels
6. the emphasis on broader planning necessitating analysis of all public expenditures; e.g., inclusion of school buildings in urban renewal programs
7. the need better to understand factors which produce a high degree of equity in educational support to provide guide lines for present and contemplated distribution of state and federal funds.

In these facets of the problem is found the need for more discerning criteria with which to evaluate the many demands being made for increased public support. In the study of the problem may be found clues to the utility of such criteria to agencies trusted with the responsibility of planning efficiently and effectively the allocation of limited public resources. Certainly, the answer cannot continue to be sought merely in the accumulation of specialized demands for public support for highways, welfare, defense, education, etc. Rather, as the limits of existing resources are taxed, the historic interplay of these demands must be charted and projected more accurately and their economic impact predicted.

The criteria which emerge should move beyond statements of theory and have direct and immediate pertinence to actual public fiscal operation. To continue each biennium to debate the course of public fiscal policy in the state legislatures does not shed light on where these policies lead. Yet, study commissions created to brighten the pathway of legislative progress along these lines have dealt traditionally with specialized concerns such as education and have not examined in a systematic way the relationship of such special concerns to the many others which compete for the tax dollar. Within this framework of total concern, the probe for an integrated system of state allocation of funds to local government must begin. Within that framework, the search for adequate, stable, and equitable support for local schools must be made.

Objectives of the Research

The research described in this report initially had six objectives. Each was viewed as a distinct though related aspect of the larger intent to investigate problems of state support and local educational finance. These six objectives are as follows:

1. to investigate state support programs in order to identify relationships of governmental and educational need, financial ability, and effort as reflected in public revenues and expenditures

2. to determine the effects or influence of representative patterns of state support on local school districts with varying characteristics

3. to uncover trends in order to forecast the economic impact of educational support in the years ahead

4. to demonstrate the effect on differing local school districts and local tax efforts of varying patterns of state support

5. to provide a foundation for the further identification of factors critical to the relationship of state and federal assistance in financing education

6. to establish benchmarks for continuing study by interested scholars and agencies of these and other aspects of school finance.

In retrospect, this investigation was made to see where we are and where we are headed in educational finance, particularly with regard to state support. Early in the investigation it became apparent that greater attention would have to be given to the critical problems of measuring the educational responsibility and fiscal capacity of school districts and the relationships of educational finance to public finance. Only by that effort could the impact of existing patterns of state support on educational finance be analyzed accurately and adequately and superior models developed.

In design, the research is unorthodox. Its primary method has not been the formulation of specific hypotheses nor the systematic testing of them. Instead, attempts have been made to explore in a variety of ways avenues related to state support of education. While appropriate statistical analyses and techniques have been generously applied, they are not exclusively the method of analysis. It was held that a broader approach is more productive in stimulating state and local thinking on improved models of state support. Moreover, it may encourage further analyses to be made at all levels of operation.

As set forth in the objectives, this investigation was designed to shed light on the immediate and eventual consequences of existing patterns of educational support. Briefly, the research included the following steps:

1. Review of research and theories of educational finance as basis for the selection of illustrative programs of state support in its broader relationship to public expenditure theory and practices.

2. Classification of school districts and the identification of each of six types with discrete characteristics in each of four states as basis for the analysis of the impact of state support programs.

3. Accumulation and analysis of data in Wisconsin school districts on a large range of variables as basis for assessing more accurately the educational responsibility and economic strength to bear it. This step is called Phase I of the analysis.

4. Further analysis of differences identified in the first phase and rotation of existing and hypothetical models of support among selected districts in the four states as basis for gauging the effects of these models when differing circumstances are taken into account. This step is called Phase II of the analysis.

The entire research was seen as a method or way of laying suitable foundations for accurate analysis of impact by any state in accordance with each of several types of state support and in terms of collateral effects in public finance.

Organization of the Report

Chapter II contains a description of the data gathered in the research and the statistical treatment given these data. The significance of this effort lay in the determination to re-examine definitively the dimensions of educational finance before moving to the more immediate matter of their interplay under varying conditions.

Chapter III provides background for a better understanding of many facets of school finance. It includes a broad scope of ideas related, in some cases indirectly, to the fiscal and educational impact of state support programs. It is intended to permit the reader to view the problem investigated against a broad background. Within this context it appeared appropriate to present information regarding the growth in educational expenditures both total and per pupil, reasons for increases in expenditures, trends in state support, and amounts of revenue of other governmental units. Also included is the percent of the total productivity of society required to support the educational enterprise and future prospects if present trends continue. Another relationship not often recognized in public school finance is the extent to which educational services are purchased privately in some communities and in some states. Projections and estimates of the future costs of education are given to re-acquaint the reader with the magnitude of the problem under consideration. Implicit in consideration of the impact of state support models is the tax sources used by each unit of government and the percent of school support provided by each governmental unit. Since it is the thesis of this study that school costs should not, and indeed cannot, be studied in isolation, expenditures by other governmental units not only currently but over a period of time are given. This includes consideration of intergovernmental transfers basic to state support of education but frequently ignored in school finance considerations. As orientation to the problem of identifying the impact of state support, the purposes of state financial assistance as presented in the literature are also included. Every practice and proposal with a bearing on state support was carefully considered for its possible implication for a hypothetical state model. The most pertinent recent considerations of both public finance and school finance theories as well as recommended statistical procedures are summarized as essential background for understanding the development of a hypothetical state support model. While the entire study has dealt essentially with state support as its primary focus, it has been necessary in a number of instances to recognize state support programs which may involve required local levies as well as state monies.

Chapter IV examines the impact of changes over a period of time in state support of schools or other municipal functions in one state (Wisconsin). The purpose of this chapter is to identify changes, either educational or municipal, which take place when state support to either the school district or the municipality is substantially altered. Here, too, extensive background material is presented showing population growth, changes in school enrollments, changes in equalized valuation of property, trends in revenue from the property tax, changes in valuation by assessment categories, and the influence of inflation.

Chapter V contains the analysis of data obtained from Phase I of the study. Methods of analysis which were used are described in Chapter II. Out of this analysis, the delineation of factors is drawn.

Since the research involves the educational and financial analysis of six types of school district in each of four states, it is helpful to provide background information from the four states. This is done in Chapter VI. The background is primarily economic and educational finance data. General information is also provided to permit a better understanding of why, as well as how, each state support program operates. It is not the purpose of the chapter to point out the state support implications of every item of information presented. However, the information included bears on the support models either directly or indirectly.

Chapter VII presents the data gathered in Phase II of the analysis. Also included are the results of the rotation of existing models of state support among the four states.

Chapter VIII draws together into concluding statements the major findings of the research. These findings form the basis of the work done in developing and refining the hypothetical model of state support.

Chapter IX sets forth the hypothetical model created by the project staff. As indicated above, this model was designed to incorporate the results of the analysis of Phase I data and to point the way toward adequate support and greater equity in educational finance.

CHAPTER II

DESIGN AND METHODOLOGY OF THE RESEARCH

Value is measured by usefulness in every sphere of human activity. In the products of research, value increases as the usefulness of what is learned is broadened. Moreover, the breadth of application of research results is closely tied to the methods employed in obtaining the results. Consequently, a description of such methods is an important part of a research report.

This chapter contains five sections. The first section is a description of the two methods used in classifying the school districts included in the study. The second section describes the method used to measure the impact of state support on educational and public finance. The third section describes the types of data compiled for each school district and procedures followed in Phase I of the project. Described in the fourth section are the Phase II data and procedures. The final section describes the method of developing the hypothetical state support model.

Classification of School Districts

Questions of inequity frequently arise in educational finance. Most commonly the questions grow out of differences in population density, economic base, and ratio of school-age to total population. The concerns grow out of such distinctions among quite different school districts when external support is provided. A more comprehensive framework within which these differences could be acknowledged was needed. Therefore, a system of classifying a large number of Wisconsin school districts was created. All school districts in the state with a kindergarten-through-grade-12 program which met the criteria established within the six classes defined below were included in the study. The system of classification thus derived was cross-checked against a recent classification of cities used in the analysis of municipal expenditures. These two systems of classification are described below.

Educational Finance Study Classification of School Districts

In order to assess the impact of state grants-in-aid on local school districts, the 104 Wisconsin school districts included in the study were placed in six classes created by the project staff. These six classes were identified and defined as follows:

1. Large city--Total population of 200,000 or more. Center of a metropolitan area with contiguous satellite suburbs. Contains newly developed, middle-aged, and deteriorating areas within its boundaries.

2. Medium-sized city--Total population of 30,000 - 199,999. Not contiguous to a large city.

3. Small city--Total population of 7,500 - 29,999. At least one major industry not directly related to local agriculture. More than 50 percent of total pupilic school enrollment from within the boundaries of the city.

4. Established suburb--Total population of 10,000 to 75,000 with population growth averaging not more than three percent per year during the past 10 years. Less than 10 percent of land area undeveloped.

5. Developing suburb--Total population of 5,000 to 25,000 with increase in population in excess of 100 percent during the past five years. Less than 50 percent of land area developed.

6. Agricultural service center--Total population of 2,500 to 7,499. More than 50 percent of total public school enrollment from area outside the boundaries of the municipality.

The distinctions that are drawn among these six classes relate to total population, although there is overlap in that respect among the last three classes. Extent of land development is used to distinguish between established and developing suburbs. Industrial development is used to distinguish between the small city and the agricultural service center, as is contiguity of the public school service area with municipal boundaries. When each of the 104 Wisconsin school districts was classified according to the above, the following numbers in each class resulted:

Large city	1
Medium city	16
Small city	22
Established suburb	6
Developing suburb	11
Agricultural service center	48

This entire classification system reflects, as it should, degrees of urbanization of school districts. These gradations have potentially much more meaning in analyzing the impact of state support than the simpler rural-urban dichotomy often employed.

Brazer's Classification of Cities

In 1959, Brazer[1] created seven categories of cities based upon an analysis of 462 cities, villages, and other incorporated places having populations in excess of 25,000 in 1950. He identified two of these categories as core city and distinguished between them by drawing the population line at a quarter million. Core cities with population greater than 250,000 were identified as major metropolitan areas; core cities under 250,000 were identified as minor metropolitan areas. A third category was the independent city with population over 25,000 but not included in a standard metropolitan statistical area. A fourth category consisted of cities identified as major resort cities on the basis of hotel receipts equaling or exceeding $60 per capita in the 1948 census of business. The remaining three categories were suburbs or staellite cities. Two of these suburbs are characterized as below the median for all suburbs in the sample on number of persons per hundred population employed in manufacturing, and the third suburb would be above the median in that regard. Moreoever, a distinction is drawn between the two residential suburbs on the basis of whether family income is higher or lower than the median for all residential suburbs. Thus, Brazer's seven categories become the following:

1. Major core city
2. Minor core city
3. High income residential suburb
4. Low income residential suburb
5. Industrial suburb
6. Independent city
7. Major resort city

In attempting to apply this classification of cities to Wisconsin school districts, several problems arose. First and foremost, the confinement of the classification to cities having 25,000 or more population sharply reduces its use in the state. Furthermore, the major resort city as originally defined has relatively little meaning in relation to Wisconsin school districts. Finally, no provision is made in the Brazer classification for what has been described as agricultural service center or trade center. Since these centers display many urban characteristics and face most urban problems, though on a much smaller scale, it seemed essential for our purposes to recognize them in any classification devised. Consequently, a modification of the Brazer classification was developed by the project staff and was used to reclassify the 104 Wisconsin districts included in the initial sample. In the modified system, the major and minor core cities remain unchanged. The suburbs were defined as "all incorporated places other than the core city which are in the standard metropolitan statistical areas and their constituent parts" which are part of our sample. The distinction between residential and industrial suburbs was redefined on the basis of mean percent of total equalized valuation of the urban center consisting of mercantile and manufacturing property. The distinction between low income and high income suburbs was based on the computed mean family income of the school district. The independent city was described as the major independent city and was defined as having a population of 25,000 or over. The major resort city was eliminated. A category described as minor independent incorporated area was added covering those places having a population of 2,500-24,999. Finally, a category was added entitled "other incorporated urban areas."

On the basis of this modified Brazer classification, the 104 districts in the sample were distributed as follows:

Major core city	1
Minor core city	5
High income residential suburb	5
Low income residential suburb	6
Industrial suburb	10
Major independent city	10
Minor independent city	12
Other incorporated urban area	55

Table 2.1 shows classification of each of the 104 districts in the sample according to both systems used.

TABLE 2.1

CLASSIFICATIONS OF 104 WISCONSIN SCHOOL DISTRICTS

District	Class	
	EFS	BR
Milwaukee	1	1
Appleton	2	6
Beloit	2	6
Eau Claire	2	6
Fond du lac	2	6
Green Bay	2	2
Janesville	2	6
Kenosha	2	2
La Crosse	2	6
Madison	2	2
Manitowoc	2	6
Oshkosh	2	6
Racine	2	2
Sheboygan	2	6
Superior	2	2
Waukesha	2	5
Wausau	2	6
Antigo	3	8
Ashland	3	7
Beaver Dam	3	7
Chippewa Falls	3	7
East De Pere	3	4
West De Pere	3	5
Fort Atkinson	3	8
Kaukauna	3	7
Marinette	3	7
Marshfield	3	7
Menasha	3	7
Menomonie	3	8
Merrill	3	8
Monroe	3	8
Neenah	3	7
Portage	3	8
Stevens Point	3	7
Two Rivers	3	7
Watertown	3	7
Waupun	3	8
West Bend	3	8
Wisconsin Rapids	3	7
Cudahy	4	5
Shorewood	4	3
South Milwaukee	4	5
Wauwatosa	4	3
West Allis	4	5
Whitefish Bay	4	3
Brookfield	5	3
Granville	5	5
Greendale	5	4
Greenfield	5	4
Menomonee Falls	5	4
Monona	5	4
Muskego	5	4
Nicolet	5	5
Oak Creek	5	5
Preble	5	5
Whitnall	5	3
Algoma	6	8
Baraboo	6	8
Berlin	6	8
Black River Falls	6	8
Bloomer	6	8
Boscobel	6	8
Chilton	6	8
Clintonville	6	8
Columbus	6	8
Dodgeville	6	8
Edgerton	6	8
Elkhorn	6	8
Evansville	6	8
Horicon	6	8
Hurley	6	8
Jefferson	6	8
Kiel	6	8
Ladysmith	6	8
Lake Mills	6	8
Lancaster	6	8
Mauston	6	8
Mayville	6	8
Medford	6	8
New London	6	8
Nekoosa	6	8
New Richmond	6	8
Neillsville	6	8
Oconto	6	8
Park Falls	6	8
Peshtigo	6	8
Platteville	6	8
Plymouth	6	8
Prairie du Chien	6	8
Reedsburg	6	8
Rice Lake	6	8
Richland Center	6	8
Ripon	6	8
River Falls	6	8
Shawano	6	8
Sheboygan Falls	6	8
Sparta	6	8
Stoughton	6	5
Sturgeon Bay	6	8
Tomah	6	8
Tomahawk	6	8
Viroqua	6	8
Waupaca	6	8
Whitewater	6	8

Key: EFS (Educational Finance Studies)
1. Large city
2. Medium city
3. Small city
4. Established suburb
5. Developing suburb
6. Agricultural service center

BR (Brazer)
1. Major core city
2. Minor core city
3. High income residential suburb
4. Low income residential suburb
5. Industrial suburb
6. Major independent city
7. Minor independent city
8. Other incorporated urban area

Impact of State Support

An immediate question arises as to the nature and extent of the impact which state support has on public finance at the local (local school district, municipal, and county) level. To answer this question the changes in state support in Wisconsin from 1925 to 1961 were analyzed in relation to their effect on the following components of public fiscal effort:

1. Current expenditure per pupil
2. Property tax per capita for education
3. Total property tax per capita
4. Effective property tax rate for school purposes
5. Effective property tax rate for other purposes
6. Percent of total current school expenditure drawn from state sources
7. Percent of property taxes devoted to education
8. Percent of total tax revenue devoted to education

For the purpose of analysis, public service demand units were measured in terms of population and school enrollment, while taxable resources were measured in terms of equalized valuation of property. Trends in population, school enrollments, per capita and total equalized valuation, and property tax revenues were analyzed. Inflation and population growth were controlled by the use of constant (1960) dollars and per capita and per pupil measures. Data were obtained for the most part from two sources. The Biennial Report of the Department of Public Instruction provided information relating to school enrollments and expenditures. Publications of the Wisconsin Department of Taxation provided information relative to property taxes, total taxes, percentages of taxes for education, and assessment categories. The U. S. Census publications provided information on population.

Two major procedures were followed in this analysis. First, substantial changes in state support of education were identified. After a review of the changes in state support over the time period, changes of approximately seven dollars or more per pupil were arbitrarily selected as representing the point of significant change in the level of state support of education. This permitted analysis of change in six different points in time. The effect of this change was determined on the eight components described above.

The second procedure consisted of identifying points of substantial change in state support of municipal governments. After reviewing these changes over the time period, a change of approximately four dollars or more per capita was arbitrarily selected as a point of significant change in the level of state support of municipal governments. Only four such points were identified. The impact of the change in state support of local governments on the eight components described above was then analyzed.

Phase I of the Research

The problem of dimensions in educational finance is formidable. On the face of it, there seem to be such clarity and stability in the established twin dimensions by which state support most often has been calculated, namely, ability and need; ability as measured by the value of real property and need by numbers of pupils. Yet, no matter what weight or adjustment is applied to each of these two conventional dimensions, they have an inescapable interrelationship which makes the traditional distinction between them artificial. The research team felt that these two conventional dimensions are in fact grossly oversimplified reflections of clusters of variables which must be considered in weaving equity into programs of financial support.[2]

Identifying the Variables

Consequently, we set out to identify every obtainable item of data having an apparent relationship to the finance of education. No tautology was assumed; variables which seemed to be measures of the same thing were not excluded. In all, 160 variables were compiled in the initial list. These variables are of two orders: 1) those having to do with sociological characteristics, and 2) those having to do with economic characteristics. The sociological characteristics are of three types: 1) general population variables reflecting such characteristics as numerical strength, occupational bent, and educational attainment, 2) the quantitative and qualitative measures of school-age population, and 3) the principal differences among educational staff with respect to such variables as: preparation, experience, and salary. The economic characteristics include public receipts and expenditures and a limited number of readily available indices. All in all, the 160 variables which were included may be clustered as follows:

	Number of variables	
1. Social characterics	79	
community		20
pupils		
quantitative variables		35
qualitative variables		8
staff		16
2. Economic characteristics	81	
general indices		18
public receipts		31
public expenditures		32

In a sense, these clusters represented an attempt to identify all reasonable variables which might be included, rather than an effort to anticipate an outcome of the analysis to be made of the data. Eventually, however, the variables were partitioned into two groups on a slightly different basis. The distinction was drawn between data having to do with the school districts' potential to support public enterprise and with the extent of educational responsibility implicit in the situation. Under this system the variables were eventually arranged as follows:

1. Support of public enterprise
    - Accumulated capital
        - valuations
        - savings
        - banks
        - absentee ownership
    - Income
        - actual wages
        - effective buying power
        - corporate income
    - Sales
    - Labor force
        - ages
        - employed
        - types
        - education
    - Municipal receipts and expenditures
        - taxes
        - indebtedness
    - Miscellaneous
        - postal receipts
        - motor vehicle registrations
        - telephones
        - value added by extractive industries
        - value added by agriculture
        - value added by manufacturing

2. Extent of educational responsibility
    - Pupil population
        - enrollments
        - age-grade distributions
        - ability
    - Staff
        - pupil ratios
        - class sizes
        - salaries
        - distribution
    - Program
        - curriculum
        - co-curriculum
        - per pupil expenditures
    - Services
        - transportation
        - health
        - lunch
    - School plant
        - investment
        - age
        - replacement costs

- Community conditions
  - crime
  - voting
  - morbidity
  - divorce
  - mobility
- Pupil outputs
  - dropouts
  - attitudes
  - post school record
- Public expenditures by municipal departments

Gathering the Data

In the gathering of the data several problems arose, the principal one of which was the discrepancy between units for which records are regularly kept. Where school districts were coterminous with municipal boundaries, the data collection involved transferring information for the school district from basic references. Major sources of information were the following:

1. U. S. Census Bureau
   - A. U. S. Census of Population, 1960
     1. Chapter A - Number of Inhabitants
     2. Chapter B - General Population Characteristics
     3. Chapter C - General Social and Economic Characteristics
     4. Chapter D - Detailed Characteristics
   - B. U. S. Census Tract of Standard Metropolitan Statistical Areas
     1. Milwaukee, Wisconsin
     2. Madison, Wisconsin

2. Post Office Department, publication No. 4, Adjusted Receipts for Calendar Year (July 1, 1961)

3. State of Wisconsin
   - A. Department of Audit
     1. Town Schedule, SA86
     2. City Schedule, SA80
     3. Village Schedule, SA
   - B. Department of Public Instruction
     1. Annual Report of School Districts, Forms 3 and 5
   - C. Department of Taxation
     1. City, Village and Town Bulletins (Nos. 359, 259, 159)
     2. 1959 Statistical Report submitted to the County Board of Supervisors, published under direction of the Department of Taxation
     3. Report of the 1959-60 fiscal year distributions made from July 1, 1959 to June 30, 1960 on file with the Corporation Income Tax Division, Department of Taxation

   - D. Motor Vehicle Registrations by Counties for fiscal year July 1, 1959 to June 30, 1960

4. "Commercial Results," May 1960, Wisconsin Telephone Company

5. "Population and Telephone Development," General Telephone Company of Wisconsin, Form S 3022 (5-57), December 31, 1959

6. Sixty-fourth Annual Report on the Condition of Wisconsin Savings and Loan Associations, December 31, 1960

7. Thirty-eighth Annual Report on the Condition of Credit Unions, December 31, 1960

8. Sixty-sixth Annual Report on the Condition of State Banks, Mutual Savings Banks, Trust Companies and National Banks of Wisconsin, December 31, 1960

Where school district and municipal boundaries were not coterminous, two devices were developed to aid in apportioning the relevant information. When the school district equalized valuation for a municipality and the local supervisor of assessments full valuation of real and personal property for that same municipality were identical, it was assumed that particular municipality was entirely within the school district. When the school district's equalized valuation for the municipality was less than the full valuation listed by the supervisor of assessments, that percentage of that municipality was apportioned to the school district. Consequently, the ratio of school district municipal equalized valuation to supervisor of assessments municipal valuation was determined for each municipality involved in the 104 school districts. This ratio is called an economic base partial and was used as a measure of how much geographic territory from each municipality is in respective school districts.

The second device was also developed as an aid in working with partials of municipalities involved in school districts. When only a portion of a municipality was in the district, it was necessary to estimate as closely as possible the number of residents living in this portion. From school census records for the year 1959-60 the children age birth through 14 were counted for each municipality previously identified as a partial. This figure was then divided by the number of children, birth through 14, listed by the 1960 U. S. census for that municipality and a ratio was established which is called the population base partial. Total population of the partial was then obtained by multiplying the total municipal population by the percent developed for that partial. A description of each variable and the method by which data were obtained for it are given below. The variables are listed in Appendix B.

1. Population of the school district was obtained by summing partial and/or total populations of all municipalities entirely or partly in the school district.

2. Equalized valuation per capita was obtained by summing the partial and/or total equalized valuations for all municipalities partly or entirely in the school district. The total equalized valuation of the school district was divided by the total population of the school district to arrive at an equalized valuation per capita.

3. Assessed valuation per cpaita was obtained by summing the partial and/or total assessed valuations of all municipalities partly or entirely in the school district and the per-capita figure derived as above.

4-7. Equalized valuations of residential, mercantile, manufacturing, and agricultural property per capita were obtained by the method described in 2 above.

8-9. Number of persons in the civilian labor force and number of families were obtained by the method described in 1 above.

10-11. Bankfootings and assets of savings and loan associations per capita were obtained by municipalities and computed according to the method described above.

12. Percent of residential buildings owner occupied was obtained by dividing owner-occupied housing units by total housing units.

13. Mean family income figures are available for all cities and villages over 10,000 population for the state of Wisconsin. For cities, villages, and towns smaller than 10,000 population, mean family income was a derived figure. To obtain this figure it was necessary to multiply the number of families in the various income categories identified in the census and to sum these multiplications to arrive at the total family income figure. This total was then divided by the total number of families in order to arrive at a mean family income for that municipality. The figures for municipalities then were converted to school district figures by the "partialing" method described above.

14. Effective buying income per capita was obtained from estimates published in Sales Management, "Survey of Buying Power," May 10, 1961. Given are population estimates for January 1, 1961, and effective buying income estimates for 1960 for Wisconsin counties, selected cities, and standard metropolitan statistical areas (S. M. S. A.). The ratios of population estimates to corresponding census population figures for April 1, 1960, were applied to net dollar income estimates and numbers of households. The total population (partials included) in the same county was divided by the census county population. Where Sales Management listed selected cities in the county, the respective values of these cities were subtracted from the county totals to obtain "rural" county figures. The census county population totals were correspondingly corrected. The partial population fractions were then used to multiply the Sales Management population estimates and net dollar buying income estimates for each of the counties (if more than one) included in a school district. These derived estimates were summed for the school district and the net dollar buying income total was divided by the population estimate to obtain the buying income per capita. With municipalities 100 percent within the school district which corresponded to selected cities listed in Sales Management, the per capita buying power or the estimated net dollar buying income, respectively, were used without multiplying by

the population fractions. School districts suburban to major cities but not part of the city school district were assumed to have values given by S. M. S. A. estimates for the respective cities. In Milwaukee County, suburban school districts whose major municipalities were not listed were assumed to be similar to either Whitefish Bay and Shorewood pooled or South Milwaukee and Cudahy pooled.

15. Effective buying income per family was calculated in exactly the manner described in 14 above. Family is the same as private household in the census data.

16. Net reported personal income tax per capita was calculated from figures found on the distribution ledger sheets for fiscal year beginning July 1, 1959, ending June 30, 1960, in the corporate income tax division of the Wisconsin State Department of Taxation. The total reported on the distribution ledger sheets represents the amount of tax returned to the municipalities. The state returns to each municipality 50 percent of the income tax collected. Before the returns are made, 8 percent is deducted for state teacher retirement purposes; therefore, the reported figure was multiplied by a factor of 2.17 to restore the figure to 100 percent. Conversion of municipal figures to school district figures again was accomplished in the manner already described.

17. Net reported corporate income tax per capita was computed in the manner described in 16.

18-19. Retail sales per capita and per household were calculated using the same method as for Variable 14.

20-25. Percentage of labor force in the several categories was derived from the 1960 U. S. Census of population, Chapter C, for the various Wisconsin municipalities. Farm managers were excluded. The number of persons in this category for a municipality was divided by the total municipal civilian labor force to arrive at the required percent. Partials related to labor force statistics were handled in the manner described.

26. Percent of labor force not in above categories consists of the number of persons listed in occupations not reported by the Census divided by total civilian labor force.

27. Median years of school completed by population age 25 and over was calculated on a district basis by recreating the distribution table using as the intervals the sum of the pro-rated numbers from each municipality in the school district. The number in each interval was obtained from U. S. Census data. For those municipalities not wholly in the school district the Census figure for each interval was multiplied by the population base partial, the product used as a pro-rated number assigned the school district. The median was then computed.

28. Postal receipts per capita was taken directly from receipts and classes of post offices, P. O. D. Publication, No. 4, July 1, 1961,

published by the Bureau of Finance. This publication gives adjusted receipts for calendar year 1960. Again, for those municipalities not wholly in the school district the reported figure was multiplied by the population base partial and this product used as the pro-rated amount assigned from the municipality to the school district.

29. Motor vehicles registered per family was taken from the State of Wisconsin Motor Vehicle Department "Motor Vehicle Registrations by County and Tax District" compiled under the authority of James L. Carnes, Commissioner, Motor Vehicle Department for fiscal year July 1, 1959 to June 30, 1960. For those districts not wholly in the school district the reported figure was multiplied by the population base partial and the product used as the amount assigned from the municipality to the school district. The total was divided by the number of families in the school district to arrive at a per family figure.

30. Telephones per capita were obtained from two basic sources. For those districts whose major municipality is in the Bell Telephone System the number of company stations reported as of March 31, 1960, was divided by the exchange area population as of January 1, 1960, to arrive at the per-capita figure. These figures were obtained from the publication "Commercial Results, May 1960" a monograph of the Wisconsin Telephone Company. It was assumed that the per-capita figure from the major municipality in the school district would be representative of the entire school district. In those districts in the General Telephone System the figure was taken directly from the company report "Population and Telephone Development Statistics" as of December 31, 1959. Again, it was assumed that the per-capita figure for the major municipality was representative of the entire school district. For districts in neither the Bell or General Telephone Systems, the average per-capita figure for the sociological classification was used. The only exceptions to this procedure were Preble where the Green Bay figure was used and Monona Grove where the Madison figure was used. All established suburbs are in the Milwaukee exchange. All developing suburbs, except Preble, Monona Grove, and Menomonee Falls are in the Milwaukee exchange.

31. Total general property tax rate of the school district was calculated on the basis of the sum of the total levy as reported in the Wisconsin Department of Taxation bulletins 159, 259, and 359 which give the levies for towns, villages, and cities, respectively, divided by the total equalized valuation of the school district. For those municipalities not wholly in the school district, the levy was multiplied by the economic base partial and the product used as the amount assigned from the municipality to the school district.

32. County tax rate on equalized valuation was obtained by the same procedure as with 31 except that the county levy was taken from the Department of Taxation bulletins.

33. Municipal tax rate on equalized valuation was also obtained as above except that local levy was used. The Department of Taxation transfers levies for school tuition and transportation from the local figure to the school levy. This shows all taxes for school purposes in the school column.

34. School tax rate on equalized valuation was taken directly from the Department of Taxation Bulletin for the major municipality of the school district. The reported rate was multiplied by the assessment ratio to get the rate on equalized valuation. It was assumed that the school tax rate for the major municipality would be approximately the same for the entire school district.

35. Receipts from general property taxes per capita were found in State Department of Public Instruction records for each municipality. If only a portion of the municipality was included in the school district, general property taxes were multiplied by the economic base partial. The adjusted figures were then summed and divided by the total population of the school district.

36-45. The various categories of revenue were computed per capita from information found in Department of State Audit schedules. Wherever, appropriate, the economic base partial was applied.

46. Property tax delinquency per capita is merely the sum of the difference between amount of property tax levied and money collected on this levy. When this sum was divided by total number of persons in the school district, the per-capita figure was obtained.

47. Percent of total general property tax delinquency was obtained by dividing the total property tax delinquency by the total municipal levy.

48. Municipal securities sold per capita is found under investments on the municipal audit schedule. On the city schedule it is sections 103 through 105 relating to securities sold. The securities sold were summed and multiplied by the economic base partial before dividing by total school district population to arrive at a per-capita figure.

49-57. The various categories of disbursement were computed on a per-capita basis by the same method used for receipts.

58. Securities purchased per capita is found in the state audit schedule under the general heading of investments.

59. Debt service per capita is payment on city indebtedness which includes interest, state trust fund loans paid to the county treasurer, principal on bonds or other long-term obligations, and principal on temporary loans.

60. Principal repayment on short-term (temporary) loans per capita is one of the components listed in Variable 59.

61. Long-term indebtedness per capita is found in the statement of city indebtedness and is basically loans outstanding at the end of the current year.

62. Temporary loans outstanding per capita are listed in the statement of city indebtedness.

63. Per-pupil receipts from state sources encompass the following areas: state aid plus state tuition, aid to handicapped children, common school fund, driver education, forest crop including severance, and transportation aid. When these values were summed and divided by school district A. D. M., the per-pupil receipts were obtained.[3]

64. Per-pupil receipts from county sources include county aid, tuition from other districts and municipalities, building charges for tuition purposes, and county transportation aid. When these values are summed, state tuition subtracted (as reported in Distribution of Wisconsin Public School State Aid Dollars for 1959-60), and this sum divided by school district A. D. M., the per-pupil figure is obtained.

65. Per-pupil receipts from local sources include utilities and local tax collections. These two values were summed and divided by school district A. D. M. to get per-pupil receipts.

66. Per-pupil receipts from federal sources include tuition, school lunch and milk, N. D. E. A. Titles III and V, homemaking, agriculture, adult education, and veterans' programs. These quantities were summed and divided by the A. D. M. of the school district to reach the per-pupil figure.

67. Per-pupil receipts from local non-tax sources include tuition from individuals and rental from property, lockers, and textbooks. This sum was divided by A. D. M. to achieve the per-pupil figure.

68. Per-pupil receipts from other sources encompass payments in lieu of taxes (local, county, state, or federal), other receipts chargeable to current operation, and other receipts not chargeable to current operation. When these items are summed and divided by A. D. M., the per-pupil figure is reached.

69. Per-pupil receipts from all sources were obtained by combining all sources from Variables 63 through 68 and dividing by A. D. M.

70-76. These variables are identical to 63-69 as far as identification of sources of revenue is concerned except that in each case the receipts are divided by total school district population to achieve a per-capita figure, rather than by A. D. M. to get a per-pupil figure.

77-84. Variables relating to enrollments, (K-6, 7-12, and K-12), school census (age 5-18), A. D. A. (resident and non-resident), and A. D. M. (resident and non-resident) were obtained directly from the Annual Report.

85-86. Ratios of pupils in highest and lowest deciles to tested population were obtained in most cases from the Wisconsin State Testing Service. The results of Hemnon-Nelson tests given to juniors in the spring of 1960 were used. The upper and lower deciles were determined by counting the number of students scoring in the 90th percentile or better and those scoring in the 10th percentile or less and dividing by the total number of the district's tested population to determine the percentages in the upper and lower deciles.

87. Mean percentile of tested population was calculated by the Wisconsin Testing Service. In those school districts where there was no participation in the Testing Service, information had to be secured from the individual school districts. These school districts were: New Richmond (where the test used was the School and College Ability Test), Racine (where the test used was the Otis Test of Mental Ability), Stoughton, Lake Mills, Ladysmith, West De Pere, and Waukesha (where the S. C. A. T. test was used), and Menomonee Falls (where the Hemnon-Nelson test was used).

88-91. Percents of graduates attending four-year university or college, county teachers' college, nursing school, or business or vocational school was obtained from the Annual Report.

92. Percent of dropouts was computed by taking the number of withdrawals not transferring to other schools and dividing it by the high school enrollment total.

93. The ratio of non-public to public school enrollments was calculated from Annual Report data except for 29 districts not reporting private and parochial enrollments. Twenty such districts furnished this information directly. The remaining nine districts, unable to furnish this information, were assumed to have ratios equal to the average ratio of the respective district classification.

94-96. Ratios of pupils to teachers, elementary (K-8), secondary (9-12), and total (K-12) were determined by dividing the appropriate A. D. M. by the respective number of total certificated staff found in the Annual Report.[4]

97-98. Average class size was calculated by dividing the district elementary and secondary A. D. M. by the reported number of elementary and secondary teachers.

99-100. Ratios of pupils to administrators were calculated by dividing the number of elementary and secondary pupils in A. D. M. by the reported number of elementary and secondary principals and administrators.

101. Ratio of pupils to special service staff was determined by dividing the total district A. D. M. by the number of teachers reported as special field teachers in the Annual Report.

103-106. Percentages of teachers having less than four years of preparation, four years of preparation, five years of preparation, or more than five years of preparation were calculated by totaling the number of elementary and secondary teachers reported in each of the above arbitrary categories and dividing by the total number of teachers in the school district.

107-108. Percentages of elementary and secondary teachers who are males were calculated from the Annual Report.

109-112. Median years of local and total experience for elementary and secondary teachers were obtained from the Wisconsin Education Association Research Bulletins numbers 59-4 and 59-5, "Salaries in City Schools 1959-60" and "Salaries in Schools Under Supervising Principals 1959-60."

119-134. Enrollments of pupils in eight subjects--English (which included speech), mathematics, social studies, science, foreign languages, the fine arts (which excluded vocal and instrumental music), vocational (which included business education, home economics, and industrial arts classes), and physical education (excluding health) were obtained from school district preliminary reports filed in the fall of 1959. Where this information was not available, it was obtained from North Central Association of Colleges and Secondary Schools records. This information covers the curricular distribution in the high schools only. The number of students enrolled in each category was recorded and the class sections in each category within a school were enumerated. By dividng the latter into the former, an average class size for that curricular category was obtained. The percent of total high school pupils enrolled in each category was also computed.

135-136. Expenditures per pupil for instructional purposes, elementary and secondary were found in the Wisconsin Education Association Research Bulletins No. 60-3 and 60-8, "Expenditures Per Pupil in Village Schools 1959-60" and "Expenditures Per Pupil in City Schools 1959-60." In the few cases where these figures were not reported in the Research Bulletins the calculations were made by dividing the total disbursements for current operation given in the Annual Report by the school district's A. D. M.

137-138. Expenditures per pupil for library supplies, elementary and secondary, were obtained in all cases by dividing the expenditures given in the Annual Report by the school district's A. D. M.

139-144. Expenditures per pupil for special education (orthopedic, mentally retarded trainable, mentally retarded educable, and vision, deaf, hard-of-hearing, and speech correction programs in the school) were obtained by dividing the expenditures of the school district for each of these programs by the number of children respectively enrolled. The numbers of such pupils were obtained from the Bureau for Handicapped Children of the Department of Public Instruction which administers these programs in participating schools.

145-146. Expenditures for transportation per pupil transported and per pupil in A. D. M. were obtained from the transportation records of the Department of Public Instruction.

147-148. Expenditures per pupil in A. D. M. for health and recreation services and school lunches were obtained from the Annual Reports.

149. Expenditures per meal served were obtained from the records of the Department of Public Instruction for all those school districts participating in the federal school lunch program. The records show the actual number of meals served and the actual expenditures for each school district participating in the program.

150. The principal and interest paid on long-term loans per pupil in A. D. M. were obtained from the Annual Reports.

151. Expenditures per capita for public libraries were calculated for the central city of each school district from data supplied by the Wisconsin Free Library Commission and from census data. This ratio was assumed to apply to the entire school district.

152-153. Percents of population 21 and over voting in 1960 presidential and gubernatorial elections were obtained by adding the votes reported in the Wisconsin Bluebook of 1962 for each municipality within the school district and dividing this total by the census reports of population aged 21 and over.

154-159. The mobility of population was determined from U. S. Census records which indicate the number of persons (1) whose residence in 1955 was in the same house in 1960 (in other words they were stable during the five-year period), (2) living in a different house in the U. S., (3) living in a different county, (4) living in a different state, (5) living abroad, and (6) who have moved but whose residence in 1955 was not reported. These items, available for each political subdivision within a school district, were multiplied by the appropriate population base partial, summed, and divided by the school district populations to obtain the respective percentages.

Ten districts, for which data concerning moves from a different state were unavailable, were assumed to have percentages equal to contiguous districts having common sociological characteristics.

160. The mobility of pupil population is really an expression of the ratio of A. D. M. to gross enrollment and is calculated as such.

161. Mean teachers' salary, K-12 is a composite variable derived from variables 38, 40, 42.

Treatment of the Data

The data gathered in this phase of the investigation--i.e. 161 variables for 104 school districts in Wisconsin--were subjected to three types of statistical treatment; namely, intercorrelation, discriminant analysis, and factor analysis.

The intercorrelation computation was completed in two stages. In the first stage, the variables were divided into two groups. One group contained 85 variables which seemed on inspection to be related to a pre-factor identified as "educational responsibility"; the second group of 76 variables seemed to be associated with "economic ability." This initial division of the variables was necessary because of current computer program limitations which permit a maximum of 100 variables to be included in one matrix. The standard computer program for Pearson product-moment correlation was used.

The intention was to identify variables which are closely correlated and reduce the total number of variables to less than 100 by discarding those which are difficult to measure, are of questionable accuracy, require excessive interpretation, or can only be obtained from unreliable sources. Intercorrelations were computed for all districts, as well as for each class of district, the exception being the large city district which was only one in number. The added treatment by class was done to seek clues as to differences in intercorrelations of variables between and among classes which may have been obscured in the total sample.

In the second stage, the same treatment was given the 100 variables selected from the original 161 variables by the method described above. In effect, this was a deliberate attempt to submit the dichotomy (educational responsibility and economic ability) dictated by the computer program limitation to investigation and thereby eliminate further need for reliance upon the artificial dichotomy. Moreover, this additional treatment of the variables aided in the further reduction of their numbers to a final list of 70 variables, each of which consists of readily accessible and objective data which are less subject to manipulation. Basically, then, the pattern consisted of three treatments of the data to accomplish the desired reduction of variables. Variables having high intercorrelations and high multiple correlations with others in their group were discarded. Also, specific factors having high loading on only one variable were discarded. By this entire process, 161 variables divided arbitrarily into two groups of 85 and 76 variables, respectively, were reduced to 70 in each group and eventually to 70 in all.

The remaining 70 variables were then given a second type of treatment. A standard computer program for discriminant analysis was used. The program is limited to 70 variables which accounts for the need to reduce further the number of variables. This reduction was, again, accomplished in two stages.

First the program was run using the initial reduction to 70 variables grouped according to educational responsibility and 70 variables grouped according to economic ability. The purpose was to determine whether or not the six classes of district are in fact unique. In this connection, Brazer's classification of cities was used as an alternate basis for analysis. In both cases, the null hypothesis was employed. The final 70 variables identified were again given this treatment as a further check on the ability-responsibility dichotomy.

The third type of treatment given the data was a factor analysis. The 70 variables in each group were subjected to this analysis. A machine language program for the CDC 1604 computer developed by Harris and Stoltz was used. This program is designed to identify what are known as "Harris factors"[5] which correspond to Guttman's "best lower bound" on the number of common factors. Factor rotation was accomplished by the use of a normal varimax trailer, described in greater detail in Chapter V.

This entire analysis served three purposes. It tested the utility of the two systems of classifying school districts. It also tested the ability-responsibility dichotomy. Finally, it identified the factors and described the relationships among the variables which dictated the direction taken in the development of the hypothetical state support model.

Phase II of the Research

At this point, attention was shifted from the 104 Wisconsin school districts to 24 districts in four states. These districts are listed below by state:

New Jersey:	Newark, Trenton, Morristown, Bloomfield, Deptford Township, Newton
Oregon:	Portland, Salem, Astoria, Oregon City, Lake Oswego, Dallas
Tennessee:	Memphis, Johnson City, Tullahoma, Alcoa, Knox County, Lake County
Wisconsin:	Milwaukee, Appleton, Merrill, Cudahy, Preble, Richland Center

In order to delve more deeply into the nature and extent of financial and educational differences among the six classes of school district, as well as help clarify and/or expand our understanding of the factors and relationships revealed in the analysis and interpretation of Phase I data, much more detailed descriptive information was sought on the educational programs of the 24 school districts listed above. The states were selected largely because of the distinctive character of their support programs. Represented by the four states are the following four types of support:

1. flat aid (Oregon)
2. flat payments based on special qualitative aspects of program (Tennessee)
3. foundation program (New Jersey)
4. incentive aid with a high degree of equalization (Wisconsin)

Special interest was centered on the differing impacts of these prevailing types of support on the six classes of school district as indicative of problems to be overcome by the proposed hypothetical state support model. Furthermore, the descriptive data were analyzed to discover additional specific characteristics of the educational programs which may distinguish among classes of school district and among states.

Types of Data

Complete descriptions of the four state support formulas together with the measures required to apply each formula to all the 24 districts were collected or calculated from a variety of sources described in Chapter VI. In addition, seven basic instruments were prepared for the gathering of detailed information in each district. The first instrument sought information of a general nature, which included the following: organization of the school day and year, school census information for 1962; the destination of recent graduates, organization of the school system, school transportation data, size and character of school lunch program, local city, county, and school district recreational programs, attendance services, special service personnel, community services and community use of school buildings, services to non-public school pupils, and nature and extent of the special education program. The second instrument was an age-grade distribution table covering all ages and levels of work. The third instrument was a staff deployment and utilization form, of which four versions were prepared. One was prepared for elementary school teachers, one for junior and senior high school teachers, one for administrative and supervisory personnel, and one for non-certificated staff. The information supplied on these forms consisted of training, experience, compensation, and assignment details. The fourth instrument provided for an inventory of all district-owned property, with information about location, size of site, optimum capacity, current use, and insurance coverage. In addition, an inventory of space and equipment was attempted which consisted of obtaining information about each teaching space, the purpose for which it is used, its dimensions, and the replacement value of the equipment it contains. The final form consisted of an attempt to obtain detailed information about the private costs to students of public school activities. Copies of these forms may be found in Appendix A.

Treatment of the Data

The amount of financial support that each of the 24 districts would receive under each of the four formulas was calculated. An index was applied to the state support calculated to be received by a given school district in order to eliminate gross differences due to varying levels of support among the four states. These equalized support amounts were analyzed to determine how well each of the formulas met the following purposes of support:

1. equalization among districts
2. relief from local taxes
3. stimulation of local expenditures

The immediately useful data reported on the seven instruments described above were subjected to statistical treatment in so far as possible or appropriate. The Friedman two-way analysis of variance by ranks both by classes of school district and by states was applied in most instances. The primary purpose of the analysis was to isolate specific characteristics at the operational level which distinguish among classes of district and among states.

The Hypothetical State Support Model

The concept and characteristics of the hypothetical state support model were inspired by the conclusions reached following analyses of (1) the impact of state support on educational and public finance, (2) Phase I factors describing 104 Wisconsin school districts, and (3) Phase II financial support patterns and detailed characteristics of 24 school districts representing six classes of school district in four states. In examining relationships between state support of education and specific educational and community characteristics, special consideration was given to the difficulties involved in identifying those characteristics which distinguish among classes of school district. The feasibility of the model was demonstrated by its application to the six Wisconsin school districts selected in Phase II of the study.

Notes to Chapter II

1. H. E. Brazer, City Expenditures in the U. S., Occasional Paper 66 (New York: National Bureau of Economic Research, 1959) pp. 61-64.

2. More definitive treatment of ability and responsibility are found in Chapter III.

3. Variables 63-84, 88-108, 137-138, 147-148 and 150 include basic data obtained from Annual Report of School Districts, Form 5, Wisconsin Department of Public Instruction, 1959-60. In the case of the developing suburbs, where union high school districts were in existence at the time of reporting, it was necessary to combine high school district annual reports with those of elementary school districts that were entirely or largely within the high school district.

4. In each instance where a distinction is made between elementary and secondary school, the former is considered to be K-8 and the latter 9-12.

5. C. W. Harris, "Some Rao-Guttman Relationships," Psychometrika (27: 3, September, 1962), pp. 247-263.

CHAPTER III

HISTORICAL AND CONCEPTUAL ELEMENTS OF EDUCATIONAL FINANCE

State support of education today is the product of thought, theory, and practice evolved throughout the history of American public education. Current concepts of state support are interwoven with ideas of local control and federal interest in education. The extent to which various tax sources are utilized also appears to bear directly on the amount and percent of state support for education and to some extent on its manner of distribution.

Because of the intensive and extensive interrelationships of state support of education to all facets of school finance and to the support of the total governmental enterprise, orientation information is desirable background for viewing the economic impact of state support models. Related materials appear almost without limit. However, a selection must be made and the following topics have been given priority for presentation:

1. Educational Finance Reviewed

2. Relationship of Educational and Public Finance

3. Functions and Trends in State Support of Education

4. Measurement of Educational Responsibility

5. Measurement of Fiscal Capacity

6. Theory and Principles of Educational Finance.

Educational Finance Reviewed

Gauged by any standard, public education has changed tremendously in the United States over the years. It has grown rapidly in recent years and will be a rapidly expanding endeavor in the future. Considering both pupils and employees, education is the largest single enterprise in the U. S. Expenditure-wise, education is second only to national defense in the public sector of the economy. Unlike national defense it is supported only sparingly by the federal government. Local school districts still carry the major responsibility for the support of education in the large majority of states, although 21 states now pay more than half the cost of education from state sources. In addition to being an enterprise in the economic sense, education is one of our three major social institutions -- family, church, school -- which shape and prepare young people for their future roles in society.

Education became a local fiscal responsibility by twice-delegated authority. The federal constitution provides that all powers not specifically delegated to the federal government are reserved to the states or the people. Since education is not specifically mentioned in the federal constitution, it thereby became a state function. The states have almost universally delegated to local districts the primary responsibility for operating and supporting schools. Thus the weakest fiscal unit of government has had to support the second most expensive public enterprise. Whether or not there should be a realignment of the responsibility for support of the several functions in the public sector of the economy by units of government is a much debated question.

Current Costs of Education

In 1960, federal, state, and local governmental expenditures totaled 128.6 billion dollars. Of this total, all public educational costs including kindergarten through college were $19.4 billions, or approximately 15 percent of all governmental expenditure.[1] On a per-capita basis, this amounted to $108.21 for each man, woman, and child in the United States. Elementary and secondary education cost $15.6 billions in 1959-60 or $87.07 per capita.

According to the U. S. Office of Education, total receipts for elementary and secondary schools were $14.747 billions in the school year 1959-60. Of this amount the federal government provided 4.4 percent, the states 39.1 percent, intermediate units 2.6 percent, and local districts 53.4 percent. During the past decade the average percent provided from state sources has remained approximately constant while the percent from federal sources increased from 2.9 percent in 1949-50 to 4.4 percent in 1959-60.[2] During this period some states have increased the percent from state sources while others are providing a smaller percent of school support from state sources than 10 years ago.

As more revenue is required to fill society's growing need for education, pressure on local districts and local tax bases has continued to mount. There is no evidence that under existing programs the pressure will diminish; increases appear much more likely. The above figures indicate that on the average state legislatures have not been particularly responsive to the increased pressure for more state support of education during the 1950's.

Nationwide, the cost of education was $472.17 per pupil divided as follows:[3]

Current expenditures	$375.14
Capital outlay	81.96
Interest on school debt	15.07

This was the largest amount ever spent per pupil in average daily attendance in the history of American education to 1959-60.

Trends in Public Educational Expenditure

The Office of Education reports that expenditures for elementary and secondary education increased from $2.344 billions in 1940 to $5.838 billions in 1950,[4] an average increase of more than one-third billion dollars per year. In the 1950 to 1960 decade, total expenditures for public elementary and secondary education increased by approximately one billion dollars per year or nearly three times as fast in dollar amounts as during the previous decade. From 1940 to 1950 the increase was 149.0 percent and from 1950 to 1960 was 161.8 percent. Because of substantial differences in the amount spent in the base years, i.e. 1940 and 1950, the percent of increase largely camouflages the dramatic increase in the 1950's compared with the previous decade. The percentage increase for the twenty-year period (with 1940 the base year) was 552.1 percent. The increases in educational expenditures during recent decades are the result of increased enrollment, the declining purchasing power of the dollar, attempted procurement of better quality in education, and increases in salaries in a competitive market for teachers. The impact of each of these factors is analyzed in this section.

A major influence in the changing cost of public education have been enrollment increases in recent years. After nearly two decades of decline during and following the depression of the early thirties, an upward turn began in 1950-51. In that year the enrollment reached 25,706,000 exceeding the 1929-30 enrollment for the first time in nearly 20 years. Enrollments have increased each year since, showing phenomonal growth in recent years. The total enrollments as well as the increase in both numbers and percent are shown in Table 3.1.

TABLE 3.1

TOTAL PUBLIC SCHOOL ENROLLMENTS[a]

Year	Total Enrollment	Increase from 1939-40	
		Number	Percent
1929-30	25,678,015	---	---
1939-40	25,433,542	---	---
1949-50	25,111,427	- 324,255	-1.35
1951-52	26,562,664	1,129,122	4.44
1953-54	28,836,052	3,402,510	13.38
1955-56	31,162,843	5,729,301	22.53
1957-58	33,528,591	8,095,049	31.83
1959-60	36,087,000[b]	10,653,458	41.89
1961-62	38,692,587[c]	13,259,045	52.13
1962-63	40,007,912[c]	14,574,370	57.30

[a] U. S. Office of Education, Trends in Financing Public Education (Washington, D. C., 1961), p. 15 (data through 1957-58).

[b] ________, Statistics of State School Systems, 1959-60 (Washington, D. C., 1961), p. 1.

[c] National Education Association, Estimates of School Statistics, 1962-63 (Washington, D. C., 1962), p. 5.

The per-pupil costs in 1929-30 and 1939-40 were almost identical in actual dollars. By the latter part of the 1930's the drastic cuts in per-pupil expenditures of the great depression had been restored and the per-pupil cost had risen slightly beyond the 1929-30 figure. From 1939-40 to 1949-50 the actual dollar increase was dramatic, increasing from $88.09 to $208.83 per pupil. Expenditures have increased sharply each biennium since 1939-40 as Table 3.2 shows:

TABLE 3.2

CURRENT EXPENDITURES PER PUPIL IN A. D. A. IN CURRENT DOLLARS[a]

Year	Cost in Current Dollars
1929-30	$ 86.70
1939-40	88.09
1949-50	208.83
1951-52	244.24
1953-54	264.76
1955-56	294.22
1957-58	341.14
1959-60	375.14
1961-62	415.00[b]
1962-63	432.00[b]

[a] U. S. Office of Education, Statistics of State School Systems, 1959-60 (Washington, D. C., 1963), p. 81.

National Education Association, Estimates of School Statistics, 1962-63 (Washington, D. C., 1962), p. 17.

[b] Estimated cost

It is obvious from the above table that most of the increase in the cost of education since 1929-30 cannot be accounted for solely by increased enrollment. With an estimated 35,748,163 pupils in A. D. A., total current expenditures in 1962-63 would have been $3.1 billion had the per-pupil cost remained the same instead of the estimated $15.454 billions.

Since only a small percent of the increase in total educational expenditure is accounted for by increased enrollment, other explanations should be pursued. Inflation accounts for a large share of the increase. The extent is shown by expressing per-pupil expenditures for current expenses in constant dollars. This is done in Table 3.3 using 1959-60 dollars.

In comparing current dollars with constant dollars as well as in expressing educational revenue as a percent of income and gross national product, calendar-year data are translated into school-year data by taking an average of the two appropriate years. This procedure conforms with the practice of the U. S. Office of Education.[5] However, this method could not be followed for 1962-63 because of the unavailability of data. Instead, an estimate was made for the second quarter of 1963 by assuming the same rate of change from the previous quarter as was witnessed between the last quarter of 1962 and the first quarter of 1963 and computing the average of this estimate with the three reported quarters.

The implicit price deflator for state and local government taken from U. S. Department of Commerce, Office of Business Economics, U. S. Income and Output, Washington, D. C. was used in calculating constant dollars throughout this study.

TABLE 3.3

CURRENT EXPENDITURES PER PUPIL IN A. D. A.[a] IN CONSTANT 1959-60 DOLLARS

Year	Amount
1929-30	$231.20
1939-40	248.84
1949-50	208.92
1951-52	322.64
1953-54	327.67
1955-56	341.32
1957-58	360.23
1959-60	375.14
1961-62	388.94
1962-63	398.89[b]

[a] Same source as Table 3.2

[b] Based on estimated expenditures

The above table clearly shows that a combination of enrollment increases and inflation together do not account entirely for increase in cost from 1929-30 to 1962-63. A 42 percent increase must be explained in items other than enrollment increases and inflation. The differences may be explained in part by increases in educational standards, expansion of opportunities, higher teacher certification requirements, and better instructional facilities such as library, science, and language laboratories. With increasing recognition of the relationship between cost and quality, the continued quest for quality will be accompanied by further increases in cost.

Increases in cost due to teachers salaries reflect the inflation of all prices in the economy but particularly the inflationary factors in the market for college-trained workers. Interdistrict competition for teachers has also driven salaries upward. Moreover, adjustments in teachers' salaries have been necessary because of rising wage rates in public and private sectors of the economy.

To assess more accurately the impact of educational costs, they must also be considered in relation to personal income and the productivity of society. Table 3.4 shows the relationship of total revenue for elementary and secondary schools to personal income and gross national product.

Table 3.4 shows that in every year since 1951-52 total educational revenue has increased in proportion to personal income and gross national product (G. N. P.). This trend probably will continue. If top quality education is provided, education will probably require 5.5 percent of state personal income payments in 1969-70.[6] It is appropriate that education have a fair share of the productivity it promotes. On the other hand, education's claims must be in line with its investment and the other needs of society in both the public and private sector of the economy.

TABLE 3.4

PERCENT TOTAL ELEMENTARY AND SECONDARY SCHOOL REVENUE[a] IS OF PERSONAL INCOME AND GROSS NATIONAL PRODUCT

Year	Percent of State Personal Income[b]	Percent of Gross National Product[c]
1929-30	2.6	2.1
1939-40	3.0	2.4
1949-50	2.5	2.0
1951-52	2.5	1.9
1953-54	2.8	2.2
1955-56	3.0	2.4
1957-58	3.5	2.8
1959-60	3.8	3.0
1961-62	3.9	3.2
1962-63	4.1	3.3

[a] U. S. Office of Education, Statistics of State School Systems (Washington, D. C., 1963), p. 13 (Revenue data through 1959-60).

National Education Association, Estimates of School Statistics, 1962-63 (Washington, D. C., 1962), p.15 (Revenue data for 1961-62 and 1962-63).

[b] U. S. Office of Education, Trends in Financing Public Education (Washington, D. C., 1961), p. 31 (through year 1957-58).

U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States (Washington, D. C., 1962), p. 319 (Personal Income, 1959-60).

________, Survey of Current Business, (Washington, D. C., 1963), p. 7 (Personal Income 1961-62 and 1962-63).

[c] Council of Economic Advisers, Economic Report of the President (Washington, D. C., 1963), p. 171.

A better understanding of educational expenditures, income, and G. N. P. can be obtained by viewing the changes which have taken place over the years. An index of change in gross amounts using 1939-40 as the base year is shown in Table 3.5.

It is evident from Table 3.5 that the increase in total expenditures for education is somewhat greater than the increase in current expenditures. Since capital outlay and interest payments constitute the major difference in these expenditures it is apparent that the capital budget has increased more rapidly than services and goods purchased by school districts. Interest is an especially rapidly growing item.

TABLE 3.5

TRENDS IN ELEMENTARY AND SECONDARY SCHOOL EXPENDITURES, INCOME, AND GROSS NATIONAL PRODUCT USING 1939-40 AS BASE YEAR

Year	Total Expenditures for Education[a]	Current Expenditures for Education[b]	State Personal Income[c]	G. N. P.[d]
1929-30	$ 98.8	$ 94.8	$108.7	$102.0
1939-40	100.0	100.0	100.0	100.0
1949-50	249.0	241.6	284.9	283.1
1951-52	313.3	294.2	345.1	352.6
1953-54	387.9	352.1	375.8	380.0
1955-56	467.4	427.2	421.1	426.0
1957-58	578.9	530.6	465.5	462.9
1959-60	666.1	637.4	516.1	514.4
1961-62	777.4	733.3	566.4	559.4
1962-63	833.8	790.4	594.6	592.3

[a] U. S. Office of Education, *Statistics of State School Systems* (Washington, D. C., 1963), p. 14 (Figures through 1959-60).

National Education Association, *Estimates of School Statistics, 1962-63* (Washington, D. C., 1962), p. 16 (Figures for 1961-62 and 1962-63).

[b] U. S. Office of Education, *loc. cit.*

National Education Association, *op. cit.*, p. 17 (Figures for 1961-62 and 1962-63).

[c] U. S. Office of Education, *Trends in Financing Public Education* (Washington, D. C., 1961), p. 85 (Data through 1957-58).

U. S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States* (Washington, D. C., 1962), p. 319 (Data for 1959-60).

U. S. Department of Commerce, *Survey of Current Business* (Washington, D. C., 1963), p. 7 (Data for 1961-62 and 1962-63).

[d] Council of Economic Advisers, *Economic Report of the President* (Washington, D. C., 1963), p. 171.

While it is anticipated that educational expenditures will require a larger share of the productivity of society in percent of income and G. N. P., the increasing percent in recent years is of some concern, not necessarily immediately but eventually. A long-term look may be taken by projecting present trends.

From 1959-60 to 1961-62 the annual growth rate for educational expenditures was 7.16 percent; for state personal income 4.44 percent; and for G. N. P. 4.02 percent. If this trend continues through the next 37 years, to the year 2000, state personal income will have increased 520 percent, G. N. P. by 450 percent while elementary and secondary educational expenditures will have increased approximately 1,400 percent. Education would then be taking 11.45 percent of state personal income and 10.57 percent of the G. N. P.

Two alternatives to this substantial increase in the percent of income and G. N. P. required by education are possible. Both are difficult to achieve. One is to increase substantially the productivity of society. Even with major attention given to this aspect of our economy by the highest industrial and governmental authorities, substantial and continued increase in productivity appears difficult to sustain. Full use of automation and full employment without reduction in the work week appear to be the road to continued increase in productivity.

The other alternative is to increase the productivity of workers in education through automation, utilization of technical workers, lay helpers, etc. How much expenditure relief this approach promises is yet to be systematically explored. Since state support can be an instrument of policy a model can be drawn which will direct major attention to increasing productivity in education.

Educational Expenditures in the Private Sector of the Economy

In this study as in most analyses of educational expenditures, emphasis is directed largely to public expenditures and their consequent impact on our economy. However, attention is called to the fact that the total impact of the cost of education in the United States cannot be ascertained without a look at educational expenditures in the private sector. It is estimated that the operation of Roman Catholic elementary and secondary schools alone costs over $2.5 billions annually.[7] While information on costs of all private and parochial schools is inadequate, some idea of the magnitude of the amount spent may be obtained from enrollments and their increases in recent years.

In October, 1950, 3,040,000 or 10.9 percent of the pupils in elementary and secondary schools were enrolled in private schools in the United States. By 1960 there were 5,967,000 or 14.0 percent of all elementary and secondary school pupils enrolled in private schools.[8] Census figures for October 1961 showed almost 15.0 percent enrolled in private and parochial schools. It is currently estimated that 15 percent of the total enrollment is attending Roman Catholic parochial schools.[9]

Private and parochial school enrollments, if shifted to the public schools, would have a considerable impact on the financing of education in many school districts. Tax increases and the relative share to be borne by the state and the local district were calculated for one state in a recent study.[10] The study concludes that if all non-public school enrollments were shifted to the public schools total taxes would be increased $73,436,161. Local taxes on property would be increased $26,219,596 or an average of 1.33 mills. State aids would increase $47,216,565 if the present state support formula remained in force. State aid per pupil in A. D. M. would increase from $87 to $122. The substantial increase in state aid is due largely to the lower equalized valuation of property per pupil. The figures include only operational costs and exclude additional transportation, special education, and capital outlay expenditures. Since private school expenditures are a self-assumed educational cost of the parents, some consideration of this cost may be appropriate in determination of the ability of the community to support the public schools.

Current Sources of Revenue for Schools

The impact of state support programs on educational finance may also be compared by type of taxes used as sources of school revenue at the various governmental levels. Taxes used for support of public education frequently differ on the local, state, and federal levels. Although not all taxes listed are used as revenue in educational support programs, they constitute the revenues which support all governmental functions and indirectly affect the support of schools.

In spite of the continued advocacy of other sources of school monies, property still carries the major share of local support. In most states it is the only local tax schools are authorized to levy. It is probably the only major revenue source that can be satisfactorily administered by units smaller than the state. Only larger cities and county school districts are of sufficient size to administer local non-property taxes.

Because of the difficulty of securing sufficient tax revenue from existing property taxes and state aids, experimentation with non-property levies has continued. In 1950 the following non-property taxes had been used or were being used by school systems:[11]

1. Sales and gross receipts
2. Income and payroll
3. Amusements
4. Cigarettes and tobacco
5. Business and occupations
6. Parking meters
7. Motor vehicle
8. Poll
9. Utilities
10. Liquor
11. Severance
12. Municipally-owned services
13. Property transfers
14. Hotel rooms
15. Gambling devices
16. Race tracks
17. Employee privileges
18. Fire insurance
19. License fees
20. Fines
21. Advertising
22. Soft drinks
23. Parking lots.

Interest in non-property taxes for schools is evidenced by the fact that two reports are in progress to be released this fall -- one by the U. S. Office of Education and another by the Committee on Educational Finance of the National Education Association.

At the state level the use of general property taxes as a revenue base continues to decline. In 1933, 33 states levied taxes on general property. By 1953 this number had been reduced to 25 and only eight of these used the revenue of the state property tax for school purposes.[12] In 1957-58 only five states marked state property specifically for education.[13] In this context state laws mandating local property tax rates are considered local property tax levies.

The states appear to have a choice of eight major bases upon which to levy taxes. Some of the bases are used extensively although several states do not currently use all possible sources. The possible choices are:

1. General sales and gross receipts

2. Selective taxes on sales and distribution of motor fuel, tobacco, alcoholic beverages, etc.

3. Personal income taxes

4. Corporation income taxes

5. Severance taxes

6. Death and gift taxes

7. Motor vehicle operator licenses

8. Business license or privilege tax on insurance companies, public utilities, etc.

A tariff was the first revenue measure adopted by Congress. It was followed by an excise tax on liquor in 1789. Other excises quickly appeared in spite of the difficulty of collection. In 1913, the Constitution was amended to permit the income tax. Since then this tax has been the largest producer of revenue.

Major sources of revenue of the federal government available for general purposes include:

1. Personal income taxes
2. Corporate income taxes
3. Excise taxes.

A review of possible tax sources by units of government indicates that the choice of the unit of government to provide school revenue involves a choice of tax sources to be used. It can be established that federal taxes are the least regressive. State taxes are next least and local taxes (property) are the most regressive of all.[14] Data on this point will be presented later in the chapter.

In addition to tax support of schools, school revenue is derived from many other sources, among which are the following:

1. Contributions of P. T. A. and other groups

2. Patron charges for special programs, i. e., tuition for summer school and for after-school curricular and extra-curricular programs

3. Grants by foundations for research and the development of programs

4. Revenue for costs of programs administered by non-school agencies such as county health department, city and county attorney, city and county library, police services, etc.

Educational statistics do not generally show costs incurred by other local units in behalf of schools. Schools often receive municipal services free of charge. This fact makes it all the more imperative that school finance and municipal finance be considered conjunctively and not independently. Contributions of non-school groups to total school revenues raises again the question of whether the future educational quality of programs will be dependent on patronage of some kind.

Future Costs of Public Education

If states continue to provide approximately 40 percent of the cost of education in the future as in the past, some estimate of future costs is essential in viewing the impact of state support. Fortunately, a number of such estimates have been made. These estimates for the most part appear to have been expressed in constant dollars but from differing base years. They have all recognized the factor of increased enrollment and either directly or indirectly the improvements in quality of education. Thus they are indicative of the cost of education based on future enrollments and higher quality and expressed in constant dollars. Some of the better known estimates of educational costs are those of the American Council of Education,[15] Barr,[16] Colm and Helzner,[17] Committee on Economic Development,[18] Eckstein,[19] Freeman,[20] Groves,[21] Hirsch,[22] Johns and Morphet,[23] National Education Association,[24] President's Science Advisory Committee,[25] Rockefeller Report,[26] U. S. Office of Education,[27] White House Conference on Children and Youth,[28] and White House Conference on Education.[29] In addition the Educational Policies Commission[30] has projected the potential range in school expenditures in 1970.

Projections and estimates differ in respect to levels of education included, public and private expenditures and different segments of educational expenditures projected. Some of the projectors have not been sufficiently acquainted with educational accounts to describe precisely what was projected. In some cases the amount projected would accommodate a very broad scope of educational activities in our society.

The estimated expenditures of the several studies range from approximately $21 billions to sums "which . . . would total at least 10 percent of our G. N. P."[31] With the G. N. P. for 1970 estimated by the National Planning Association at $770 billions,[32] this would mean $77 billions for education. Current trends clearly indicate that the $77 billion figure will not be reached by 1970 unless improvements in program during the balance of the 1960's are substantially accelerated over present trends. However, it should be kept in mind that this upper limit of projected expenditure is an estimate of what should be spent for education rather than an estimate of what will be spent.

The several nationwide estimates of school expenditures have served useful purposes in providing a view of educational finance in the years ahead and directing attention to the magnitude of the task of supporting properly public education.

If states continue to provide approximately 40 percent of the cost of education in the future as they have during the present decade, state support will reach ten billion dollars annually when total current expenditures reach $25 billions. According to a number of estimates this amount will be reached or exceeded by or before 1970. The impact of state support of this dimension on all segments of the total economy will be impressive.

Relationship of Educational and Public Finance

While independent school districts are units of state government, legally separate and distinct from municipalities, it is becoming increasingly evident that education cannot be considered entirely apart from other governmental units in fiscal affairs. Educational budgets cannot be divorced from expenditures for other governmental functions. Recognition of the close relationship is essential to any consideration of school support. At each governmental level, tax sources available to schools overlap tax sources of other governmental functions.

Public funds are expended in the United States by many governmental authorities for many purposes. In addition to the federal government there are 50 state governments and some 100,000 local public spending authorities. These units, in response to growing demands for public services in recent decades, have undertaken a vast array of new activities and an expansion of existing activities. New functions have been added steadily and many existing ones have been improved in quality and in scope. The expansion of governmental functions clearly reflects the increased demand for public service arising in part from the affluence of the population and the concentration of population in urban areas.

The combined expenditures of federal, state, and local governments have shown a sharp increase in the past two decades. In 1960, expenditures for all levels of government amounted to $128.6 billions compared to $60.7 billions in 1950 and $18.1 billions in 1940.[33]

The national defense function has been the principal determinant of trends in public expenditure in the past two decades. The national defense bill was $1.6 billion in 1940, $18.4 billion in 1950 and $47.5 billion in 1960.[34] The 1960 figures represent an increase of two and one-half times the 1950 expenditures and nearly 30 times the 1940 level. By comparison, all governmental expenditures increased seven-fold from 1940 to 1960.

In spite of the large increase in expenditures for national defense from 1950 to 1960, the percent of increase for the federal government was actually lower than either state or local increases. The percents of increase were as follows: federal, 102 percent; state, 123 percent; local, 130 percent.[35] Here, too, the magnitude of the expenditure in the base year must be considered when percent of increase is presented.

The federal government in 1960 received 68.1 percent of total tax receipts, the states 15.9 percent, and local governments (including local schools) 16.0 percent.[36] There has been relatively little change in the past ten years in the percent of all revenue received by each of the levels of government. On a percentage basis the federal government received slightly less and state and local governments slightly more than ten years earlier.

With respect to the amount or percent of revenue received by any unit of government, attention must be given to intergovernmental transfers of funds. From 1950 to 1960 the transfer of funds from the federal government to states increased on the average 180.5 percent and from the federal government to local units 180.6 percent. During the same period state to local transfers of funds increased by 122 percent. The federal government is increasingly becoming the revenue collection agency for state and local governments and to a lesser extent the state government is becoming the collection agency for local government. The amount received by each level of government is more properly expressed as the amount retained after intergovernmental transfers are made. The amounts of these transfers in 1960 were as follows:[37]

1. Federal to State	$6,382 millions
2. Federal to Local	592 millions
3. State to Local	9,361 millions

Almost one dollar out of three of national income (actually 3.2) was spent on governmental functions in 1960.[38] Total governmental expenditures at all levels of government in the United States increased from 22 percent of the national income in 1940 to 25 percent in 1950 and 31 percent in 1960.[39] This upward trend in the ratio of governmental expenditures to national income from 1940 to 1960 illustrates the increasing importance of the public sector of the economy.

Assuming some finite limits to local sources of revenue the tax for schools determines the leeway for other local governmental functions which are dependent upon the same tax base. Total state support channeled to the community by aids, shared taxes, or any other method has its impact on education as well as on other public services. Apparent equalities in local school districts may be illusory when viewed in the context of over all community fiscal requirements. This effect will be illustrated for each of six districts in four states in a later section of this report.

Functions and Trends in State Support of Education

Turning more directly to the state's role in the support of education, the historic functions and the changing character of support are briefly summarized. This section contains reviews of the equalization functions, the property tax in educational support, trends in state support, and state tax sources.

Equalizing Functions

Equality of educational opportunity is the fundamental principle of American education -- a principle which states that our democracy is best served by extending to all the children an equal minimum opportunity to attend schools adequate for the achievement of self-realization, economic efficiency, civic competence, and effectiveness in human associations. To deny this principle is to thwart the basic purposes of American education as conceived by its founders and developed to meet the needs of a modern civilization.

Equality of educational opportunity means, not an identical education for all children, but the provision, by state and local means, of an education adequate for present conditions. The acceptance of education as a function of the state and the insistence that the attainment of certain minimum educational standards of quality are the concern of all its people makes it incumbent upon the state to provide the machinery through which the principle may be realized.

"Equalization of educational opportunity" in earlier years implied "equalization of educational taxes." In essense this connotated that each state should insure equal educational opportunities to every child within its borders through uniform tax rates throughout the state; the tax load for education throughout the state should be uniform in relation to taxpaying ability and the provision for schools should be uniform with respect to population, the expense of which should be considered a prior claim on the state's economic resources.

The classical statement of the implication of the principle of equality of educational opportunity, as given by the Educational Finance Inquiry Commission[40] in 1923, recognized the obligation of the state to require at least minimum schooling for all the children, to place the support of this minimum schooling equally upon the resources of the state, and to make supervision an important element in the state's program. The minimum concept has since been interpreted to mean a satisfactory or adequate program. Underlying the equality principle is the concept of an adequate program for all districts without placing a ceiling on opportunities, assuring every district the right to go beyond the state-supported program.

Many other purposes are served by the state aid program. Below are a few of these purposes as perceived by those who have studied state support of public education. These purposes have helped to shape present state support programs and should help to shape those of the future.

Swift[41] lists the following purposes of state aid programs:

1. To achieve general tax relief for school districts

2. To encourage improved state administration and supervision of schools

3. To stimulate the local school unit to undertake some activity which the state believes desirable

4. To compensate local communities for educational costs resulting from unusual situations

5. To equalize school revenues, school burdens, and educational opportunities throughout the state using state funds.

Updegraff[42] lists three basic purposes of the state foundation program:

1. Equalization
2. Stimulation of backward districts
3. Reward for districts making unusual effort.

Other purposes of state support programs, listed by other authors[43] include:

1. Broadening the tax base which supports public education
2. Bringing about desired change in the state education systems
3. Providing an instrument for enforcing compliance with state law
4. Making a minimum level of educational opportunity available to all children of the state
5. Making possible optimum use of available resources.

State support has become an educational way of life in most states. As the costs of education increase, extension of state support will become more imperative. Equality of educational opportunity without extensive state support is impossible in most states. Even a cursory review of state-by-state data convinces one that without a high level of state support many districts cannot afford top quality education and other districts can support top quality education only with a prohibitive tax rate.

The problems of providing all children adequate educational programs at reasonable costs have been intensified by declining rural values due to the persistent population flight from the farm, the erosion of tax base in the central cores of our great cities, and in some states by unjustified property tax exemptions. The development of sprawling service-hungry suburbs and the down trend in property values of completely developed suburbs whose older mansions sell at depressed prices intensifies the problems. Thus as the local tax base declines and widens the extremes of fiscal capacity of school districts, state support appears as the one immediate path to achieving equalization of costs and educational opportunity. It should be recognized, however, that equalization of costs or of educational opportunities has been achieved to only a limited extent by state support programs up to the present time.

While the major functions of state support are to achieve equalization of educational opportunity and equalization of tax levies, it is also imperative in a number of states that educational support be shifted to tax sources supplementing property taxes. This may become an important function of state support.

Property Taxes and Educational Support

The administration of the property tax and its proper place in school support continue to be major concerns. Studies of obstacles to satisfactory fiscal administration are numerous. Unduly restrictive limitations placed upon the millage which may be levied or on the amount which may be borrowed severely restrict local initiative. Inequalities of assessment and excessive irrational exemptions further hamper property tax potentials. Recently some states have attempted to correct the defects in structure and administration of the property tax through legislation.

Since financial support of the schools in many states currently rests heavily on the efficient use of the local property tax, the schools have an inherent interest in the best possible administration of that tax.

Nebraska, Iowa, and New Hampshire supplied 86.8, 84.5, and 80.5 percent respectively of school funds from general property taxation in 1960. At the other extreme, only 7.2 percent of Hawaii's school revenue and 9.8 percent of Delaware's were from property taxes.[44]

The average local revenue in school support (including intermediate revenue) for the 50 states in 1960 was 56.0 percent of the total revenue[45] -- federal, state, and local. The preponderance of local revenue is derived from the general property tax.

In recent years, property tax rates for school purposes have increased 22 percent or 1.8 times faster than property tax rates for all state and local purposes.[46] In the years ahead, due to rising costs, additional revenue for schools will be needed. Some additional revenue may be expected from increases in the tax base in a rising economy and some from increased tax rates. However, it is extremely doubtful that the elasticity of the property tax will be sufficient to produce all or nearly all the additional tax revenue needed for schools.[47]

Compared with other revenue sources available to the federal and state government [illegible] the property tax is less sensitive than most tax sources to increases [illegible] the productive capacity of the economy, especially in the rural sector.

As actually administered, the property tax is properly characterized as the most regressive of all taxes. Table 3.6 taken from data recently prepared by the Tax Foundation,[48] supports this accusation.

TABLE 3.6

Family Personal Income Class	Federal Individual Income Tax	State-Local Excise and Sales Taxes	State-Local Property Taxes
Under $2,000	1.8%	4.8%	5.9%
$2,000 - $3,999	4.5	3.9	4.6
4,000 - 5,999	6.0	3.7	4.1
6,000 - 7,999	7.9	3.6	3.7
8,000 - 9,999	7.5	3.5	3.4
10,000 - 14,999	8.9	3.2	2.8
15,000 and over	16.3	2.1	2.1

It is clear from the above table that property taxes take the largest percent of family income in the under $2,000 class. In this respect it is even more regressive than excise and sales taxes. Property taxes take a larger percent of family income than do excise and sales taxes in each income bracket up to $8,000. In family incomes of $8,000 and over property taxes take a smaller percent of family income than excise and sales taxes except for the $15,000 and over brackets where the percent of family income required to pay the taxes is the same. It is apparent from the table that by comparison the federal individual income tax is related much more closely to income. Improvement of the property tax or tax substitution for it or both are points to consider in improvement of school support.

Trends in State Support of Education

While public education is legally a state responsibility, the states historically have delegated the responsibility for operation and to a great extent the financing of education to local school districts. With increasing demands for improved educational programs and school facilities, pressures on local tax sources have resulted in demands for more state funds in most states. State legislatures, sympathetic to the viewpoint of local taxpayers, gradually increased appropriations to assist local school districts in financing educational programs until the percent of school revenue from state sources reached 39.8 of the total cost in 1949-50. While the dollar amount has been substantially increased since 1949-50, the percent provided from state sources declined slightly holding at 39.1 in 1959-60. The National Education Association estimated the amount of school revenue from state sources at 39.8 percent in 1960-61, 39.2 percent in 1961-62, and 39.4 percent in 1962-63. Thus the percent of all school revenue provided from state sources appears to be stabilizing at about 40 percent and the dollar amounts from state sources will continue to increase as they have done over the last 33 years as shown in Table 3.7.

TABLE 3.7

REVENUE FROM STATE SOURCES

Year	Percent from State Sources[a]	Amount per Pupil in A. D. A. from State Sources[b]
1929-30	16.9	$ 16.63
1939-40	30.3	31.05
1949-50	39.8	97.19
1951-52	38.6	106.57
1953-54	37.4	114.81
1955-56	39.5	138.03
1957-58	39.6	162.32
1959-60	39.1[c]	177.54[e]
1961-62	39.2[d]	196.74[f]
1962-63	39.4[d]	204.43[f]

[a] U. S. Office of Education, Trends in Financing Public Education (Washington, D. C., 1961), p. 39 (Percentages through 1957-58).

[b] *Ibid*., p. 34.

[c] U. S. Office of Education, Statistics of State School Systems, 1959-60 (Washington, D. C., 1963), p. 55.

[d] National Education Association, Estimates of School Statistics, 1962-63 (Washington, D. C., 1962), p. 15.

[e] *Op. Cit*., Statistics of State School Systems, 1959-60, p. 6 and 52.

[f] *Op. Cit*., Estimates of School Statistics, 1962-63, p. 9 and 15.

The changing pattern of state support is seen in Tables 3.8 and 3.9 in a classification of the percent of state support received in each of the states in 1890 and in 1960.

TABLE 3.8

PERCENT OF SUPPORT FROM STATE AND FEDERAL FUNDS, 1890[a]

Less than 15%	15-29%	30-49%	More than 50%
Colorado	Connecticut	Arkansas	Alabama
Illinois	Delaware	Indiana	Georgia
Iowa	Florida	Louisiana	California
Kansas	Minnesota	Maine	Kentucky
Massachusetts	Missouri	Maryland	New Jersey
Michigan	Nebraska	Mississippi	North Carolina
New Hampshire	New York	Nevada	South Carolina
Pennsylvania	North Dakota	Utah	Tennessee
Rhode Island	Ohio		Texas
South Dakota	Oregon		Virginia
Vermont	West Virginia		
	Wisconsin		
TOTALS: 11	12	8	10

[a] P. R. Mort, W. C. Reusser, J. W. Polley, Public School Finance (New York: McGraw-Hill, 1960), p. 196.

TABLE 3.9

PERCENT OF PUBLIC SCHOOL REVENUE RECEIPTS FROM STATE AND FEDERAL FUNDS, 1959-60[a]

Less than 15%	15-29%	30-49%	50-75%	Over 75%
Nebraska	Colorado	Arizona	Alabama	Alaska
New Hampshire	Illinois	California	Arkansas	Delaware
	Iowa	Connecticut	Florida	Hawaii
	Kansas	Idaho	Georgia	New Mexico
	Massachusetts	Indiana	Kentucky	
	New Jersey	Maine	Louisiana	
	Rhode Island	Maryland	Mississippi	
	South Dakota	Michigan	Nevada	
	Vermont	Minnesota	North Carolina	
	Wisconsin	Missouri	Oklahoma	
		Montana	Pennsylvania	
		New York	South Carolina	
		North Dakota	Tennessee	
		Ohio	Texas	
		Oregon	Washington	
		Utah	West Virginia	
		Virginia	Wyoming	
TOTALS: 2	10	17	17	4

[a] National Education Association, Financing the Public Schools, 1960-1970, (Washington D. C., 1962) p. 137.

Whether the stabilizing trend witnessed since 1950 or the historical trend shown in tables 3.8 and 3.9 will be the pattern of the future is difficult to surmise. Burkhead[49] sees only a small upward shift in state support with the property tax continuing to increase with rising school costs. However, a case may be made for a return to the historical trend. A major motivating force is the pressure for reduction of the regressive property tax and substitution of other revenue sources. A related factor is that since 1950 substantial increases in revenue from state sources have provided essentially the same percent of all revenue from state sources due to inflation and increased enrollment. With enrollment expected to increase at a slower rate and with some indication of a more stable economy, comparable state action will produce an increased percent of revenue from state sources.

State Tax Sources

In contrast to the heavy reliance on property tax as the base for local governmental support, the states tap a variety of sources to produce revenue. Nearly 88 percent of all state revenue was produced by 10 sources in 1962. These sources listed in order of their tax-producing ability in 1962 are:[50]

1.	General sales taxes	$5,068	millions
2.	Motor fuels	3,687	"
3.	Individual income	2,730	"
4.	Motor vehicles and operators license	1,675	"
5.	Corporate net income	1,306	"
6.	Tobacco products	1,077	"
7.	Alcoholic beverages	741	"
8.	Property taxes	642	"
9.	Insurance premiums	591	"
10.	Death and gift taxes	521	"

It will be noted that property tax is far down the scale as a producer of revenue at the state level. States have largely turned over the property tax to local government and have assured its use in school support through state mandated levies. The large state revenue producers are general sales taxes and income, both individual and corporate.

Measurement of Educational Responsibility

Throughout the history of education the term "need" has been used to describe the responsibility of a community. Frequently, in actual practice it has been restricted to mean the number of children of school age or in attendance. This limited definition of need does not adequately describe the educational responsibility of most communities. Educational need is as closely related to the program as to the number of pupils. However, the definition of educational need still lacks the preciseness required for judgments and its measurement is equally unprecise.

The lack of accurate measurements of educational responsibility or need is a serious limitation when considering the economic impact of state support programs. Regardless of the attention given to financial factors in state support programs, equalization cannot be achieved without an adequate measure of the education needed in each community.

The breadth of educational responsibility or need was clearly recognized by Mort in 1924 when he defined it as "the composite of all those elements in the community that would affect the cost of the public educational offering demanded by a state program for making available to all children a set minimum educational opportunity."[51]

From the inception of state support programs it has been necessary to apportion funds to local districts according to some basis of educational need. The following measures of educational need have been proposed or used in various forms and combinations for the apportionment of state funds. In considering the several measures, some of the limitations of each measure are also presented.

One of the first methods proposed for apportionment of state funds was according to area of school district.[52] It is difficult today to see any logical connection between district size and educational need. When one teacher was employed in a given district regardless of the number of pupils, the cost of an educational program may have seemed to be related to size of district. This measure became useless with changes in population density and when the number of schools and teachers was related to the number of pupils enrolled.

As communities were taxed by the state for education, they began to demand that the money be returned on the basis of amounts paid. Apportionment was determined by the taxes paid by each district, and any inequities existing in taxpaying ability among districts were perpetuated by this distribution of funds. This criticism may be leveled against shared taxes today.

Use of the valuation of taxable property as the basis for the apportionment of educational funds also perpetuates inequities. This measure of educational need contains no element directly related to educational factors or programs.

Distribution of state funds according to total population proved an untenable method. It bore no direct relation to either the number of children to be educated, the number of teachers required, nor the educational effort of the community.

State funds frequently have been apportioned on the basis of the number of school-age children residing in the various school districts. The weakness of this method of measuring educational need is that the laws of the state sometimes define compulsory school-age children differently in different districts. Moreover, different districts provide education for different age spans. This is particularly true in the varying provisions for education of the handicapped, vocational education, etc. School census does not take note of poor attendance, private school attendance, or attendance by resident children in schools outside the district. Varying lengths of school terms and differences in staff adequacy or pupil-teacher ratios are not recognized. If these weaknesses were corrected, numbers of school-age children would still be a poor measure of the communities' educational responsibilities since educational costs are only loosely related to the numbers of school-age children. This becomes obvious by contrasting urban with small, sparsely-settled, rural school districts. Differences are revealed in pupil-teacher ratios, transportation costs, and the expense of adequate supervision and other educational services.

Numbers of teachers employed by the district as the basis for apportionment of state funds may be helpful to sparsely settled areas, but it may also perpetuate small, uneconomical, inefficient schools. It also provides more assistance to more able districts since they can afford smaller classes and more adequate staffs. Thus the district needing state aid the least may profit most under a state support program based on the number of teachers employed.

Some states have attempted to tie the apportionment of state aid to the implementation of a state salary schedule based on training and experience. Under the plan the state typically recognizes the cost of the school program as being the cost of the state salary schedule plus an additional percentage to cover nonsalary costs. The weakness of this plan is that is penalizes the poorest districts since they normally cannot obtain the high caliber teachers recognized financially in the upper ranges of the schedule.

The distribution of state funds based on enrollment is another method of recognition of the educational needs of the school district. However, it encourages communities to enroll as many pupils as possible without offering any incentive to keep them in attendance. It also encourages a larger class size.

Allocation of state funds according to average daily membership is coming into more general use. While creating a better incentive to communities to keep pupils enrolled in schools, it offers no incentive to the schools to assure regular attendance of pupils. Rather, it places a premium on allowing irregular attendance as long as the names are kept on the school roll.

The use of average daily attendance as the basis for distribution of state funds to school districts emphasizes the importance of keeping the pupils in school each day. It places a premium on regularity of attendance. However, it does not appear to define accurately the total educational responsibility of a district.

Because of inequities and inaccuracies in measurements of educational need, this concept was analyzed in numerous studies by Mort and his associates. Starting in 1924, their efforts were directed to the discovery of better measures of educational need and the determination of the items to be included in the state support program. They established three criteria for the selection of educational items to be included in a state support formula. First, any educational activity found in most or all communities throughout the state is acceptable as an element of state support. Second, any unusual expenditure for meeting standard educational requirements over which a local community has little or no control also should be recognized. Third, if it could be established that unusual conditions required extended or more costly types of educational offerings, these should be recognized in apportioning state funds.

On the basis of the first criterion, state aid would be granted to support minimum programs of elementary and secondary education including costs of buildings and equipment. Kindergarten and vocational education would not be accepted under this criterion. The second criterion would demand the consideration of transportation costs in sparsely-settled areas and of greater per pupil expenditure in small schools due to small classes. Also included under this criterion would be provisions for differences in costs of building construction, fuel expenses due to climatic conditions, and cost-of-living differentials. Under the third criterion the demands in some communities for kindergarten, vocational education, special education, etc. would be considered.

Units of need for measuring the educational responsibility of each community were then developed by Mort. Typical teacher standards for each district were determined using the number of children to be educated as a guide. Thus, it was possible to determine a standard number of typical teachers for a district of any given size.

To find the typical number of teachers for a certain type of education, e.g. high school, the communities were grouped by size according to the number of children in A. D. A. Then the average number of teachers provided in each size group was determined. No smoothly advancing change could be noticed in number of teachers provided in proportion to the size of the school system. Either of two methods served to remedy this situation -- the use of smoothed averages or mathematical curves. A two-way distribution was made of the typical average number of teachers and the size of the school enrollment in A. D. A. From the line of best fit it was possible to read from a correlation chart or to compute from the appropriate formula the number of teachers to be allowed a school of a given size for a specific type of education.

The number of teachers was used only to give relative weightings to pupils as measures of educational need. To obtain weighted pupil values within a given type of education the typical number of teachers in that type of education was used as means for obtaining the weighting.[53]

The measurement of educational need developed by Mort depended upon average practices for determining the weightings. Mort's weighted pupil measure concentrated upon the pupil-teacher ratio factor. This is usually higher in large schools and in urban centers than in smaller schools and in sparsely settled areas. In addition, a commonly higher pupil-teacher ratio in elementary than in high schools causes some authorities to maintain that the pupil-teacher ratio is an unjustifiable measure which should be abandoned.

In spite of the criticisms offered, standard units are still the most frequently used measure of educational need. The most frequently employed standard units in present state support programs are weighted pupil units and weighted classroom units. These measures have been developed and refined by authorities since the original Mort study, but are based on the same central idea. Each investigator has made an effort to correct the measure of educational need to take into account those expenditures which are beyond the control of the local community. However, inequities continue to result from sparsity costs of rural districts. In the state of Illinois, which in 1950 apportioned funds on the basis of average daily attendance, some counties received support for over $96 of actual instructional cost for each $100 of state aid distributed while others received support for slightly more than $60 of actual instructional cost.[54]

Based on a national pupil-teacher index developed in 1930,[55] Norton and Lawler computed educational need for all states in 1940. Burns, Johns, Evans, and Hutchins have made studies relating to the necessity of measuring the need for transportation of pupils in sparsely populated areas.[56] Burns related transportation need to population density while Johns took into account the number of children to be transported and costs of transportation per pupil. Evans was the first to apply to transportation costs the technique of measuring costs in terms of job units, "comparable units being cost of operating conveyances of a given size over a route of a given lenth for a specified period of time."[57] Hutchins produced a regression formula predicting cost per pupil per month on the basis of the number of pupils transported, density, and index of road conditions. McLure developed a technique which combines pupil-teacher ratios and transportation costs, and predicts the corrections or allowances to be made to pupil units or teacher units by regression formulas based on the sparsity of population.

Another factor to be considered in the development of a standard unit measurement of educational need is the percentage of children in high school. Because it is more expensive to operate high schools than to operate elementary schools, it is frequently advocated that secondary education be weighted in proportion to its fair cost in terms of elementary education. For example, "weighted classroom units may be legislatively defined as: 20 kindergarten pupils in A. D. A.; 20 high school pupils in A. D. A.; 24 elementary pupils in A. D. A."[58]

Other factors for which weightings and corrections of the formula might be made are differences in cost of living, differences between current and other expenditures, or any additional items which result in major differences in per-pupil costs. A study by Harry developed cost-of-living estimates using indices based on rent of a standard room and cost of certain food items.[59] Sargent related the foundation program and the measurement of educational need to educational services offered. He weighted services such as curricular offerings of schools, guidance, health, club activities, school newspapers and yearbooks, testing, and sports, and used correlation methods to determine the relationship among the weighted service scores, school size, and per-pupil cost.[60] Waterman proposed a method of measuring educational need which takes into account not only variations in costs resulting from the size of the school, but also differences in relationships among current expenditures other than those arising from teachers' salary differentials.[61]

Since capital outlay has only comparatively recently been incorporated into the foundation formula, a limited amount of work has been done on the measurement of need for capital outlay purposes. In this respect, capital outaly expenditures might be included by adding a flat, fixed percentage to the current expense foundation program. Moreover, weighted units of need which take into account sparsity factors or weightings due to size of school serve admirably as measures of need for capital outlay.

The most recent change in measuring educational need was instituted in New York State during the 1962 legislative session. Here the density factor was given weight in determining educational need. In recognition of the added services that larger districts provide especially for handicapped children, additional aid may be paid to larger districts. Under certain circumstances an additional $25 per weighted pupil in A. D. A. may be paid. In the six largest city districts an additional 10 percent of regular operating aids may be substituted for density aids described above. In effect this extends from $500 to $550 the expenditure level in which the state will share in the larger school districts. Data are not yet available to permit an objective judgment on the equity of this legislation.

Despite experimentation and research, there is no scientific evidence to indicate that a complex encompassing measure of need is preferable to a simple measure or vice versa. Adherents of a single measure of need usually cite as advantages the simplicity and objectivity of the single measure and the advantages which it gives to local control. A single measure of this kind avoids the implications that local expenditures within the foundation support program are being prescribed by the central government, while at the same time it provides the local governing body with the means for predicting the amount to be received. However, advocates of comprehensive measures of educational need affirm that no single item adequately measures total educational responsibility of a district. As a matter of fact, no single or complex measure of educational need used up to the present appears to be valid.

The most concise statement of what a measure of educational need should include is given by Cornell and McLure:[62]

1. Include all essential elements of educational costs

2. Reflect all significant cost variations due to factors beyond the control of local boards of education and

3. Exclude earmarking or compliance features which destroy local initiative and determination.

While the above statements indicate the framework for measurement of educational need, the application is difficult. When consideration is given the demand and need for comprehensive and specialized programs in the several districts for pupils with extremes of ability and cultural background, some preparing for vocations in high school, others taking the first steps toward the highest levels of formal study, present day simple or encompassing measures of educational responsibility appear inadequate. Yet under present accounting records and procedures, information needed for precise analysis is almost impossible to obtain. Schools cooperating in this research have spent untold "man-days" in compiling the information requested. Yet even this large amount of data collected appears to be inadequate for pinpointing all differences in educational responsibilities necessary to apportion money equitably under a state support program to school districts of differing characteristics. A state support model excellent in theory will not be excellent in practice under present methods of determining educational need or responsibility. Readily available data which permit more precise measurement of the educational responsibilities of each district is a prerequisite of a sound operational state support model.

Measurement of Fiscal Capacity

The previous section emphasized that state support formulas require an accurate measure of educational responsibility in order to achieve equity.

Most state support programs also require a satisfactory method of measuring the fiscal capacity or taxpaying ability of school districts. This is the case when a state support program includes a fiscal equalization concept and a state-and-local sharing concept related to the ability of the local district. It is not so when state support is apportioned to districts without regard to their financial ability.

This section describes measures of ability to support public education which have been proposed or used in state and local support programs and points out some of the inadequacies of each measure. Since many of the same basic principles apply to the measurement of fiscal capacity at the state and local levels, methods of measuring taxpaying ability at the state level are also explored, although the primary focus is the measurement of local financial ability.

Fiscal capacity is a quantitative measure of the resources which a taxing jurisdiction has and presumably can use to raise revenue for public purposes. Factors which determine the fiscal capacity of a population to support education are: income, wealth, business activity, other demands made upon these resources, the quantity and quality of governmental services supported and reflected in the cost, and the demand factor -- the importance people accord governmental services compared with their private wants.[63] Such factors as these combine to create total fiscal capacity to support education.

There are essentially two approaches to measuring fiscal capacity. One approach uses indicators of economic activity, notably measures of the flow of resources out of which state and local taxes can be paid. The other approach evaluates the taxable resources -- the tax bases -- available within a state and estimates the amount of revenue that can be produced if they are subjected to various levels of taxation.

In the first approach to measuring fiscal capacity, income is frequently used. Since taxes are generally paid out of current income, personal income is assumed to be a satisfactory measure. However, one must be cognizant of the fact that personal income as a measure of fiscal capacity has several limitations: (1) it is an estimated figure of the Office of Business Economics of the Department of Commerce -- there is no existing method for obtaining actual figures on income received by residents of each state at the present time; (2) in estimated form it is gross income before deductions for dependents, business expenses, etc.; (3) the figures are subject to revision which complicates their use in a state support program; (4) income figures do not include income of the business sector which is retained -- i. e., not passed on in wages or dividends; (5) reported income includes private institutional income, part of which is tax-exempt; (6) figures on income, except in decimal years are available only for a state and not for political subdivisions; a few states prepare estimates of personal income by counties but many do not. Income is a crude measure of fiscal capacity which needs refinement if used as a measure of fiscal capacity in a state support program.

The second approach to the measurement of fiscal capacity is to calculate the comparative yield of a uniform tax system. In this situation, "capacity" is defined as "the potential ability of states and localities to raise revenue through taxation."[64] If the uniform system of taxation reflects the present state and local tax structure, the tax bases used will be property, sales, etc. and may not correspond closely to personal income.

A national problem in using the revenue yield estimates of a uniform tax system as the gauge of fiscal capacity revolves around the composition of that tax system. Beyond the question of the selection of taxes to be included is the question of weightings to be given the various bases and taxes when combining them into a single index. Among the weighting systems which have been used or suggested are the following:[65]

1. the different bases can be weighted in proportion to the revenue derived from them by state and local governmentsas a whole;

2. the bases can be weighted by applying to all states the average effective tax rates of the states actually imposing each type of tax;

3. some ideal or hypothetical tax rate structure can be used.

A great many of the studies of variations in the taxpaying ability of local school districts have used property valuation as a measure of ability. To express the fiscal capacity of the district to support education, property values have been divided by some unit measure of educational load such as per capita, per pupil, per teacher, or per weighted pupil. This is the procedure used in most states at the present time. Cyr, Burke, and Mort concluded that a study of ability to support schools must go much deeper than the study of money, and that it must involve such factors as productivity, consumption, wealth, and income.[66] Davis classified measures of taxpaying ability under three categories: (1) the amount of wealth possessed, (2) the income received, and (3) the amount spent.[67] Smith concluded that "ability is the unit of economic power back of each unit of educational work to be performed," and that an index of economic resources best measures taxpaying ability.[68] Chism used a system of state and local taxation based on the model tax plan of the National Tax Association and calculated the relative taxpaying ability of the states in terms of their ability to raise taxes under that plan.[69] Norton measured the taxpaying ability of the states by calculating the economic power behind each pupil.[70]

Mort and Newcomber used still another approach in which they computed the yield of a "modern tax system" as a criterion of the relative taxpaying ability of the states. They then developed an index of the relative taxpaying ability of the states using ten economic and population factors.[71] The Council of State Governments and the U. S. Office of Education have used "income payments to individuals" per child or per capita as a measure of the relative taxpaying ability of the states.[72] The Iowa Research Committee on School Finance also advocates income as a measure of relative local taxpaying ability.[73] Cornell did pioneer work in the use of an index of taxpaying ability using such factors as population, retail sales, motor vehicle registrations, gross production, number of individual tax returns, and postal receipts.[74] Mort devised a method for measuring the ability of the states to finance education in terms of their capacity to raise state and local tax revenue. To do this he used a system where each possible measure of ability was weighted and combined in a formula for determining ability of the state to finance education.[75]

Newcomer and Chism also developed a measure of the ability of the states to support public education which has possibility of adaptation to smaller units. Their proposal is expressed in the formula:[76]

$$\text{Ability} = \frac{\text{Tax resources available under model tax plan}}{\text{No. of children 5-17 years of age}}$$

If the amount of money that can be raised in each state by applying a tax model is divided by the number of children of school age in the state, the quotient is a significant index of the relative ability of the state to finance its educational program. Not all the income from taxation is available to support education. Other governmental activities must also be supported with this revenue and these expenditures might require that percentages of the total revenue from one district to another and one state to another be varied.

Going one step further, Norton and Norton developed a composite index of economic resources for all states. This index is the "arithmetical mean" of the percentages of the tax and economic resources of the states as indicated by the application of Chism's and Newcomer's formulas and by the authors' own index, the elements of which are ten weighted economic items.[77] A measure of the ability of the states to finance education was derived by dividing the percentage of the nation's resources found within each state by the percentage of the nation's children residing in the state. This plan, too, has possibilities of adaptation to smaller governmental units assuming major changes in our tax structure and allocation of tax resources.

Indices of Local Taxpaying Ability

In his pioneer investigation of the measurement of local taxpaying ability, Cornell created four categories of possible measures for approximating the relative value of real property in a county. This procedure was based on the idea that property is the major tax base of the local community. Statistics compiled mainly by the Bureau of the Census and direct estimates of values of certain classes of real property were used as the first category. The second category includes various measures of population which have an important bearing upon property values. The third category contains measures related to collective income and purchasing power of individuals in local units as underlying factors of taxpaying ability. The measures in the fourth category are called resultants and concomitants, since in most cases they reveal evidence of all factors but are not in themselves considered causative agencies in mutations of property values.[78] Cornell assumed that property values reflect economic activity and that it is possible to obtain other indices of that same economic activity. Cornell's index more closely related to equalized than to assessed valuations of property. Using the index, he predicted equalized valuations by counties rather closely from the following measures:

1. Total population
2. Retail sales
3. Motor vehicle registrations
4. Production
5. Number of individual income tax returns
6. Residence telephones
7. Savings and bank deposits
8. Postal receipts.

One of the major problems in creating indices of ability on the local level is that data needed to calculate the index are rarely compiled for units smaller than counties. School districts as large as counties may be necessary to secure satisfactory data to measure taxpaying ability accurately.

Criticism may be leveled against this continued use of indices of taxpaying ability since better data on property valuation are becoming increasingly available. If an index of fiscal capacity is to be used, it should probably include only those items on which a tax can be levied.

Many other investigators have conducted studies related to some phase of fiscal capacity. The above-mentioned were cited because of variations in their measures of taxpaying ability and because their studies related most directly to the measurement of fiscal capacity or taxpaying ability of school districts.

Objection can be registered against almost any measure of taxpaying ability to support schools. For example, most measures are expressed on a per-pupil or per-teacher basis which hopelessly confuses fiscal capacity and educational need or responsibility. Furthermore, both the accuracy of data and the assumption that it measures fiscal capacity are questionable in many states whether the base be the valuation of property or any other resource. The limitations of data on personal income payments as a measure of fiscal capacity have already been noted. Per-capita retail sales as a measure of fiscal capacity suffers both from inaccuracy of measurement and from impossibility of allocation to school districts. Purchases are not confined by shopping habit to the school district of residence. The same objections are applicable to most other indices of taxpaying ability. Yet, with all their limitations and imperfections, measures of fiscal capacity continue to be used not only for educational support but as the basis for support of other governmental functions.

Standards for Measuring Ability to Finance Education

Standards for measuring ability to finance education were cited in the report of the National Survey of School Finance.[79] They are reported below:

1. All measures used should be objective.

2. Measures used should be based to the greatest degree possible upon dependable data systematically obtained by governmental agencies at regular intervals and by tried and established methods.

3. Measures used should be as equitable as they can be made without the introduction of undue complexities.

4. State aid should be non-fluctuating in nature.

5. The plan should be such as to have a commonsense appeal both in the measure applied and in the scheme of distribution.

These suggestions do not, however, go to the heart of school finance issues. Stated succinctly, the following are the issues:

1. Can fiscal capacity to support education be adequately measured?
2. Is it essential that fiscal capacity be measured and used in a state support program?

Theory and Principles of Educational Finance

A review of theory is essential background in the development of school finance models. Theoretical constructs and theories in public finance bear directly on school finance, especially when school finance is viewed in relation to financing other public enterprises. Applicable theories in both public and school finance have been examined. A limited number of the more useful theories are described below.

Public Finance Theory

In public finance, theoreticians and scholars have directed attention to the development of theory from Adam Smith to the present. Fortunately for education, many theories of public finance have direct applicability to educational finance, particularly if analyzed within an educational context.

Perhaps the most important contemporary work in the formal theory of expenditure in the public sector of the economy has been done by Musgrave.[80] Musgrave helpfully separates the conduct of the public economy into three branches -- distribution, stabilization, and allocation. The function of the distribution branch is to determine and secure the proper state of distribution of resources among individuals. The function of the stabilization branch is to maintain a high level of resource utilization and stabilize the value of money. The function of the allocation branch is broadly defined as provision for the satisfaction of human wants. It is more specifically defined as the function of securing necessary adjustments in the allocation of resources by the market.

The allocation branch of the economy is the most important of the three when applied to education at the local level. Governments have the problem of determining the true preference of the public. Whether a city desires more education or more highways is often a difficult question to answer. If the resources available are used for the schools, they cannot be used for other public or private wants. Directly or indirectly, it is the decision of the people which determines the allocation. At the state and federal levels the decisions are further removed from the persons profiting by or suffering from the choice,and the operation of choice is more difficult to demonstrate.

Budgetary theory is closely related to Musgrave's allocation branch. It may be viewed as the problem of dividing resources among the various public wants. One of the earliest and most concise statements of the problem of budgetary theory was presented by Key.[81] He relates allocation to the maximization of return.[82]

More than a decade later, Lewis devised three propositions which appear applicable to all public budgetary allocations:[83]

1. Since resources are scarce in relation to demand, the basic economic test is that return from every expenditure must be worth its costs in sacrificed alternatives.

2. Incremental analysis (additional value to be obtained from additional expenditure) is necessary because of diminishing utility.

3. The comparison of relative merits is made only in terms of relative effectiveness in achieving a common objective.

Decisions to expend money for a given function must be made on the basis of whether the results of that expenditure will be more valuable (presently or in the long term) than the expenditure of money for any other purpose. This is the question that must be answered by the public in deciding the amount of money to be allocated to public education.

Lindblom points out[84] some weaknesses of the budgetary process which are applicable to economic resource allocation for schools:

1. Legislative decisions that authorize expenditures are typically made without benefit of budgetary considerations.

2. Costs and benefits are usually not weighed against each other.

3. Policy-making is not viewed as a problem of choice of alternative means for achievement of desired ends.

4. Some major expenditure policies are set as the result of other decisions.

5. Many of the financial implications of the decision are ignored when the decision is made.

Lindblom also observed that the problem-solving capacity of the human mind is limited and the rational process of allocation does not take into account the complexities of governmental decision-making nor the special problems of values and objectives.

Other contributions to the theory of public expenditure with implications for educational finance have been made by Samuelson[85] who devised a mathematical formula to assist in the explanation of theory, and Buchanan[86] who developed the organismic and individualistic approaches to public finance theory. This analysis provides a number of pertinent points directly applicable to school finance. It is suggested that the theory of governmental finance may be erected on one of two political foundations: (1) the organismic approach in which the state, including all individuals within it, is conceived as a single organic entity; and (2) the individualistic approach in which the state is represented as the sum of those individual members acting in a collective capacity. These two theories have not been clearly separated and distinguished previously in literature of government finance.

Organismic Theory

In the organismic theory the state is considered a single decision-making unit acting for society as a whole. The end or goal of society may be called general welfare or social utility. Social utility is a function of many variables. Many of these variables are non-economic. Even among those that can be classified as economic a relatively small proportion can be embraced in fiscal theory. The variables to be determined in the fiscal process fall into two groups -- the expenditure variables and the tax variables. The amounts of public expenditure allocated to various purposes comprise the expenditure variables; the amounts of tax load imposed upon each economic entity or tax source comprise the tax variables. It is the function of the "fiscal plan" to select the values of these variables which will maximize social utility. The optimum values for the tax variables cannot be determined independently except for given values of the expenditure variables. The principle of equimarginal sacrifice or subtraction, if values are given for the expenditure variables, provides an acceptable rule for the apportionment of the total tax burden. This can be used only with reference to a social, not an individual, concept of utility. The necessary condition for achieving the optimum value is reached when a dollar of expenditure yields the same return, in addition to its social utility, in each area of the state. For each change in the apportionment of the tax load, a new optimum must be found.

Individualistic Theory

The individualistic theory replaces the state with the individual as the basic structural unit. The income of the state represents payment made by the individuals in exchange for services provided. The extent and range of public services are determined by the collective willingness of individuals to purchase them. Services will be extended as long as the aggregate benefits are held to exceed the costs. Each individual is subjected to some fiscal pressure. His economic resources are reduced by the amount of tax that he bears. Benefits received by individuals have been minimized because there appears no precise manner of imputing shares of the aggregate common benefit from public services to specific individuals. Secondly, it is recognized that the underlying ideal of "quid pro quo" is not at all acceptable in the modern state.

Fiscal analysis has proceeded as if all taxes were net subtractions from social income never to be returned. If benefits from public services accrue to individuals as a group, it follows that specific benefits are in fact received by particular individuals. Only if individual shares of aggregate benefit from public services are held to be roughly equal can the concentration of analysis on the allocation of tax burden alone be theoretically justified. The difficult problem of individual benefit imputation must be faced squarely. It is impossible to consider the burden of taxation without considering at the same time the benefits derived from the expenditure of such revenues.

Since society does not make decisions directly about the extent of redistribution of income, it is for the fiscal scientist to make this calculation. He is able to indicate alternative tax and expenditure allocations which would yield approximately equivalent distributive results. The major obstacle lies in attempts to transfer theoretical concepts into realistic policy.

In our economic system the crucial aspect of resource allocation is to determine whose preferences are to prevail regarding activities to be supported and the degree of support to be provided. This aspect of public expenditure is of greatest importance to educational finance. Whether the public schools receive a greater or lesser share of the economy's resources depends upon the people's attitude toward education and whether this attitude is translated into authority at the local, state, and federal level. The public still appears to view education as an expenditure rather than an investment although the latter view has been generally taken by economists.[87]

Educational Finance Theory

In contrast with public finance where theory appears to have been developed consciously as theory, educational finance theory appears to have grown within a utilitarian context with less regard for its theoretical aspects. Ideas in school finance were first tried, then analyzed rather than formulated as theory prior to introduction into practice. Some of the "theories" developed within a utilitarian framework will be examined briefly in this section.

Prior to the present century most of the concern in providing state aid for education was with the following:[88]

1. stimulation of the establishment of local schools and services not provided in many districts, but deemed to be needed in all parts of the state;
2. stimulation and encouragement of local effort in the support of schools;
3. provision of financial assistance for all districts to help them with their troublesome problem of obtaining sufficient revenue to organize and keep their schools in operation.

Prior to the twentieth century one or both of the two basic ideas of "equalization" and "reward for effort" seemed to underlie all state-aid programs. There appears to have been little conscious recognition of these two principles, however, until after the pioneer study of Cubberley[89] in 1905. He examined the fiscal policies adopted by the various states and their experiences with those policies. He noted the extensive use of special aids to encourage or assist designated aspects of education and the recognition of the idea of rewarding communities for their effort. He called this idea the "reward for effort" principle. Cubberley also recognized the need for greater assistance to the poorer communities than to the wealthy, and thereby called attention to what is termed the "equalization principle."

In 1922, Updegraff, on the basis of studies in New York and Pennsylvania, also directed attention to the need for greater emphasis on equalization, but continued to stress the importance of stimulation. He attempted to develop a plan which would equalize the financial burden yet distribute general state aid in a manner related to effort as measured by the tax rate. A major contribution of this plan was the proposal of a method of measuring financial capacity based upon the equalized valuation of the various local school units.[90]

The "foundation" concept was first introduced and interpreted by Strayer and Haig in 1923. This date marks the birth of the "foundation program" which has had such profound influence on the development of school finance. Their study showed the inconsistency between reward for effort and the principle of equalization.[91] They attacked problems in school finance by making intensive, descriptive studies of conditions in New York, Iowa, California, and Illinois. These were supplemented by a nationwide study of fiscally independent and dependent cities and of unit costs in higher education. At the end of the chapter on "The Size of the Unit for School Support and the Problem of State Aid" under the subtitle, "Equalization of Educational Opportunity" is found the conceptual pattern that has had and today is continuing to have such far-reaching significance.

Strayer and Haig concluded[92] that, due to the diverse relationships of the taxpaying abilities of the districts, equalization of educational opportunity could best be achieved in the following manner:

1. A local tax in support of a satisfactory "minimum" educational offering would be levied in each district at a rate which would provide the necessary funds for that purpose in the richest district.

2. This richest district then might raise all of its school money by means of the local tax, assuming that a satisfactory tax, capable of being locally administered, could be devised.

3. Every other district would be permitted to levy a local tax at the same rate and apply the proceeds toward the costs of schools.

4. Since the rate is uniform, this tax would be sufficient to meet the school costs only in the richest districts and the deficiencies would then be made up by state subventions.

New York was the first state to apply the Strayer and Haig definition of equalization in the actual development of a program. This plan was prepared by Mort under the sponsorship of Strayer and Haig. Mort's study of the measurement of educational need provided the basis for determining the level of support in terms of local school districts' practices within a state. This was the "foundation program" concept in practice.

Mort proposed that the uniform tax rate, reasonable to the people of the state as indicated by current practice be determined by use of a "key" district rather than the wealthiest district. He defined the key district as being "one which is neither handicapped nor privileged as to amount of taxable wealth." He concluded "where the local units are small, the wealthiest county or the wealthiest large city district may be taken as the key district, in lieu of the wealthiest district, without introducing significant inequality."[93] But he warned that this should not be accepted without comparing the advantages with the disadvantages.

The foundation program concept has been expanded and modified through the years as it has been put into practice by many states. The changing concept has brought about the interchangeable use of the terms "foundation program," "minimum program," "minimum foundation program," and "equalization program."

Generally, the term "foundation program" has been preferred in recent years. "In reality this has meant the essential educational opportunities which should be provided through the public schools for all students regardless of the wealth of the district in which they lived or attended school. It is the program which should be supported throughout the state on a partnership basis by an equitable combination of state and local funds."[94] In recent decades, the foundation program has been enlarged to include other items of expenditure such as transportation, capital outlay, and/or debt service. This has come with the realization that factors other than current expenses directly affect the educational program.

The most recent development in state support has been what is perhaps best characterized as the "incentive state support program." It embodies many of the concepts implied but not made explicit in Updegraff's "stimulation" proposal. This program, first enacted in Wisconsin, has been adopted with some variation in Rhode Island, New Mexico, and New York. It is currently being considered in Maryland. The theoretical concept of this plan is that there should be made available as many dollars per pupil for children in the poorest district as for children in the wealthiest districts. The same tax rate on the equalized valuation of property should produce the same amount of money for each child from state and local sources in all districts. This is accomplished by placing a "guaranteed valuation" back of each child with the state matching the local tax rate on any valuation the district lacks in having the guaranteed valuation per child. This plan is distinguished from the foundation program in that no set amount of money per pupil is provided in all districts and no set mill rate is established to provide the money. Beyond the specified minimum tax rate required in all districts to share in any state support each district determines the tax rate to be levied and the amount to be spent. It appears to be significant that states making recent changes in their state support programs have incorporated the concepts of the "incentive state support program" and that Mort abandoned the foundation program concept and advocated the incentive state support program in advising on state support revisions in Rhode Island, New York, and New Mexico.

While the incentive state support program appears to be effective in encouragement of educational improvement and equalization of tax rates its economic implications should also be viewed: (1) the state's share of school costs is determined by decisions at the local rather than the state level; it is therefore difficult to evaluate state support of education in relation to the support of other state functions; (2) local districts tend to classify expenditures within categories which are state-supported rather than placing them in their proper budgetary category when not state-aided (this objection is not limited to incentive state support programs); (3) the amount of state support needed is difficult to estimate and frequently requires deficiency appropriations; and (4) the incentive to increase productivity and efficiency in education is reduced since the state in many cases shares (in some cases heavily) in any additional amount spent.

Recent Developments in Concepts of State Support

In spite of the fact that the percent of school revenue has remained relatively constant over the past several years, state support has continued to receive major attention. In a recent investigation of state support programs

H. T. James reported[95] that 13 states had made changes in their state support programs during 1961 and had further changes under discussion and study. Three states reported changes in 1961 with no further changes contemplated. Fourteen states reported no changes in state support programs during 1961 but had proposals for change under discussion and study. Twenty states reported no substantial changes in state support patterns with none contemplated. James found a trend toward state encouragement of increased local effort through support program provisions and a trend to increase the yield of mandated levies.

A preliminary survey of action of the 1963 legislative sessions reported from thirty-six states shows a range in percent of increase in general aids for education from 1.0 percent to 33.6 percent for the biennium. The median increase in the states reporting was 15.2 percent.[96] It may be assumed that states not reporting had less satisfactory legislative sessions or that their legislatures were not in session or had not completed action on their school support measures.

New York State enacted a state support program in 1962 which eliminates the necessity for special aids and yearly legislative revision. This enactment provides for easy adjustments of yearly changes in costs and in the financial ability of the local district to support education. The state aid received by the school district is determined by the amount of money included in the annual school budget up to $500 per pupil in most districts and $550 in the larger districts with the state assuming its share of the increase as provided in the state aid formula. In this way, any increase in costs for services ordinarily provided or additional costs for new services required is automatically added to the program up to the designated maximum.[97]

The percent-of-cost formula used in Wisconsin and Rhode Island is being given serious consideration in other states. In a report to the State Board of Education in October, 1961, Mort recommended its adoption in New Mexico.[98] It is currently being considered for adoption in Maryland.[99]

A number of states have experimented with local non-property taxes. These non-property taxes have been most successful in the heavily populated cities, rather than in rural or sparsely settled areas. Even in cases where a school district is not included within the boundaries of the municipality administering the non-property tax, the district may benefit indirectly by receiving more property-tax leeway. In Pennsylvania where non-property taxes for schools originated and where they have been most extensively used, they may with few exceptions be levied by school districts on anything not taxed by the state. Non-property sources are now considered a permanent part of the tax structure of the state.[100]

A few states have experimented with state support programs in which costs of the foundation program are computed from salary schedules. This plan has some intriguingly good possibilities.

The development of a cost-of-education index for the United States is a significant recent experiment in educational finance. This index is intended to measure inflation or deflation and permit school districts to determine what part of the rise in school expenditures is actually devoted to improvement of the educational program. It could provide a basis for allocation of state support in constant education dollars. However, no state has as yet incorporated this idea in its state support program. Furno, chief developer and proponent of the cost-of-education index, states[101] its three major purposes: (1) to measure trends in purchasing power of the school district over the years; (2) to provide for automatic changes in state foundation programs to adjust to inflation and deflation; and (3) to set forth defensible fiscal policy on the state and local levels for the improvement of public education.

In a recent publication the conviction is expressed by Mort that urban and suburban schools are suffering from patterns of support of general government and that most state aid systems do not adequately provide for the differential impact of debt service and for increased costs due to inflation and rising standards of living.[102]

Principles of State Support of Education

Based on their study and analysis of proposals and practices in state support of education, a number of authors have formulated principles which relate directly to the impact of state support models on educational finance. The most pertinent principles, particularly those which may provide guidelines for the development of a hypothetical model are summarized in this section.

Updegraff formulated five statements[103] which he considered to be fundamental principles for a plan of local and state support:

1. Local support is fundamental.

2. Local units should contain enough property, taxable for school purposes, to raise that portion of the expenses of the school which should be borne by local districts without undue burden upon the owners of the property.

3. Some portion of support should come from state governments.

4. The administration of state aid should encourage the efficient participation of citizens in a democratic form of government.

5. The purpose of state aid is not only to protect the state from ignorance, to provide intelligent workers in every field of activity, and to educate leaders, but also to guarantee each child an opportunity equal to that of any other child for the education which will best fit him for life.

Thurston and Roe add four principles[104] for state aid systems developed by the Michigan Finance Committee:

1. The local district should have the basic right to adapt the program to its needs and desires.

2. Local experimentation and flexibility must be permitted.

3. The state aid plan must have sufficient stability to permit communities to plan effectively their programs over a period of years.

4. The primary function of the state should be leadership as reflected in service and research activities.

Cyr, Burke, and Mort state that four principles of school finance are evident: "The principle of state responsibility, the efficiency principle, the equalization principle, and the prudential principle."[105]

The principle of state responsibility has as its justification the historical development of education and the legal basis of the state system of education. The efficiency principle dictates that optimum value must be received for the funds expended for public education. The equalization principle includes the concept that the state provide a minimum level of education for all children and support this level from the financial resources of the entire state. The prudential principle is based upon the right of the state to protect public funds.

McGuire suggests the following principles[106] for developing adequate state financial support programs:

1. State equalization should be compulsory; i. e., the local unit should be required to do the things necessary to receive aid.

2. Equality of effort should be guaranteed by an equitable system of local and state taxation so that the individual tax burden would be commensurate with ability.

3. A state aid school should not be subjected to greater state control than a self-supporting school.

Three additional principles are added by Morphet:[107]

1. The state support plan must recognize that capital outlay and debt service are related to educational costs and that the provision of funds for capital outlay is as much a part of state responsibility as allotments for teacher salaries.

2. Teacher units are an appropriate measure of capital outlay and debt service.

3. The allotment for capital outlay and debt service can be added to the minimum support program and become part of the foundation program.

Domian states[108] that equalization of funds for capital outlay can be achieved if "(1) funds were alloted and distributed in accordance with an objective formula which would consider fiscal ability of local school units; (2) the state department of education approved in terms of minimum standards or location plans for school buildings built with state funds; and (3) the state department of education provided consultant services related to the survey and need and design of school plants."

Corey has identified three areas of educational finance which would be benefited by new approaches:[109]

1. The concept of local control when it acts as a deterring factor in school district reorganization. Unsatisfactory district organization forces inadequate educational programs on the children.

2. The conviction that a large proportion of the local school budget must be financed through taxes which are locally determined and locally levied.

3. The theory that the wealth of the community is the single index of the outside subsidy to be received. This theory is beginning to break down, particularly in the big cities. The total property tax burden must soon be considered as well as the index of wealth.

Statistical Advances of Research in Educational Finance

Until recently research in educational expenditures seldom looked beyond the correlation between two variables. Current research has demonstrated that older statistical procedures are inadequate. To tell the complete story, distributions of variables and the homogeneity or lack of homogeneity of variables need analysis. The relationships of variables and the theoretical models into which correlations may be fitted need to be constructed. "Models which relate socio-economic variables to school expenditures, additional statistical methods, and often the solution of simultaneous equations and the intersection of planes, become necessary to advance research on educational expenditures."[110]

McLure demonstrates in recent research the need to go beyond simple correlational analysis. His study of the relationship of eight variables in 26 school districts utilized the Thurstone centroid method and the analytic rotation or quartimax method of factor analysis to determine whether there are general factors which account for the combination of variables which shape the characteristics of school systems.[111]

In another study, Shapiro used multiple and partial correlations and regression analyses for four cross-sections for 1920, 1930, 1940, and 1950 to identify socio-economic determinants of expenditures for education in Southern and non-Southern states.[112] He established that certain socio-economic factors operate to determine level of expenditure regardless of region and that the relative importance of the explanatory factors is not the same for all regions. He also pointed out that the relationship of income and educational expenditures is much more complex than is commonly assumed. To test the hypothesis of a close relationship would require not only the comparison of incomes of those at any given level of education but of those graduating from schools where the expenditure for education (and presumably the quality) was high with those where the expenditure for education (and presumably the quality) was low. This type of study has not been made.

A number of additional studies have resulted in the development of additional concepts important to school finance. The concepts are listed numerically on the following page. Some of these concepts appear sufficiently documented to justify acceptance; others require further investigation. All appear to bear directly on the impact of state support models on educational finance or the formulation of a hypothetical state support model.

1. In spite of all the imperfections of state support models, they more closely approached theoretical equalization in 1959-60 than in previous years.[113]

2. Per-capita income of a state is the most important variable in determining the expenditures of the school districts of a state. In one study[114] it accounted for 78 percent of the variance in current expenditures.

3. As per-capita income payments increase the proportion of total income payments expended for elementary and secondary schools decreases.[115]

4. While the effect of state aid is to increase per-pupil expenditures, most state aid is a substitute for local effort or local support.[116]

5. There is no evidence to show that one type of existing state support is superior to any other in effecting an increase in educational expenditures.[117]

6. Pupil-teacher ratios are the chief factors influencing expenditure for education.[118]

7. The average per-pupil and total expenditure can be satisfactorily derived from staff size and average daily attendance.[119]

8. Value of real property is highly correlated with personal income in the school district.[120]

9. Per-pupil assessed valuation of real property is the most significant determinant of current expenditures per pupil.[121]

10. There is an absence of significant economies of scale in school districts.[122]

11. Equity requires that adjustment for municipal governmental costs be made in formulas for state support of education.[123]

Educational Finance Theory and Practice Summarized

Although concepts of an ideal program for state support of education can be theoretically conceived, they are difficult to enact. Major differences between generally accepted theory and practices relating to the educational program and its financial support may be summarized as follows:

1. While equalization of educational opportunity is one of the major concepts of a good state support program, it is not being achieved. A large proportion of the youth of the nation now complete high school and substantial numbers attend college, but many drop out for one reason or another before completing the high school grades. Studies have shown that a large proportion of the most able students

either do not enter or do not continue through institutions of higher learning. Thus the human resources of the nation are being underdeveloped.

2. The educational program in many communities is inadequate. Due to insufficient funds, ineffective leadership or both, some communities do not provide the appropriate educational opportunities to meet the needs of many pupils. There are wide differences in financial support for schools and wide variations in educational opportunities among communities. The place of residence of a student has considerable influence on his educational future. Discrimination is illegal or at least is indefensible. Yet discrimination based on place of residence is not unusual and is accepted in many parts of the country.

3. Many citizens do not contribute to the support of public schools in accordance with their abilities. This situation exists in many cases not because the individuals attempt to avoid the proper responsibility, but because the laws permit inequities. Many of the resources of the states are not utilized effectively to assist in providing adequate educational opportunities for all. Property taxes have been and still are the chief support for public schools on the local level. Yet, assessment practices continue to be inequitable in many communities and cause (sometimes intentionally) inaccurate estimates to be made of ability to support education.

4. For many years the people in most states assumed that schools should be supported chiefly from local funds. With the spread of industrialization, local differences in wealth and ability were greatly accentuated. Although states started providing funds for the poorer districts, the people in all districts soon demanded state funds. As a result the wealthy districts often receive, in proportion, as much or more money as the less wealthy districts -- a condition which exaggerates rather than alleviates the differences in taxpaying ability.

5. Although the American people generally believe in the desirability of local initiative and responsibility, they have in some states permitted restrictive or crippling features to be incorporated in their statutes. Such restrictions have limited the amount of taxes that may be levied locally for school purposes or for all purposes including schools. The state aid granted in some cases has not been sufficient to offset the handicap imposed by the limitations. In some cases handicapping restrictions are imposed on the amount of money which may be borrowed.

6. There has been an unwillingness in many states and communities to abandon outmoded financial practices that have been sanctioned by law and to which the people have become accustomed. Often school districts or groups of taxpayers resist change because they do not want to surrender their privileged positions. Thus enactment of forward-looking legislation is frequently thwarted even when badly needed.

7. Some states and local school systems have had more capable civic and educational leadership than others. These states and communities have taken the lead in initiating adequate and equitable educational finance policies which embody the concepts and objectives of good education.[124]

The differences between concepts of good education and the concepts in actual practice point up the difficulty of enactment of legislation providing an equitable state support model. Until the public interest becomes more important than private interests in decision making this situation will continue.

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CHAPTER IV

IMPACT OF STATE SUPPORT ON EDUCATIONAL AND PUBLIC FINANCE IN WISCONSIN

Prior to analysis of variables and factors impinging upon educational finance, a brief reveiw of changes in state support of education and local government in Wisconsin over a period of time was made. In this chapter, an effort is made to determine whether substantial changes in state support have altered in any discernible manner fiscal relationships in the public sector of the economy.

Measures of Impact

Impact may be measured in many ways. Subtantial increases in state support of education in Wisconsin were analyzed in relation to eight easily-obtained measures. The intent was to uncover any relationship between the increases and the measures. The following measures were selected:

1. Current expenditures per pupil
2. Property tax per capita for education
3. Total property tax per capita
4. Effective[1] property tax rate for school purposes
5. Effective property tax rate for other purposes[2]
6. Percent of total current school expenditures drawn from state sources
7. Percent of property taxes devoted to education
8. Percent of total tax revenue devoted to education

As a basis of inquiry, changes in the allocation to education, and to municipalities from 1925-1961 were analyzed. To permit the impact to be viewed in relative rather than absolute terms, it was necessary to express changes in demands for public service in some manner capable of being related to taxable resources.

Public Service Demand Units

At least two ways exist of measuring public service demand units of a community. One is the gross amount of revenue required by the public sector of the economy. This measure assumes that a community has certain service demands and raises sufficient revenue to meet these demands. This method further assumes that all service demands are being met and that the public sector operates in a condition of consumer demand so that public expenditure represents consumer choice. These assumptions are open to question. Hence, the utility of this approach is limited. A different measure of public service demand units, and the one accepted in this analysis, is population. A necessary assumption of this measure of public service demand units is that the demand for goods and services in the public sector of the economy is in direct proportion to the total population. That is to say, that each individual represents a demand unit.

School enrollment represents the school population, thus the educational demand units are represented by total public school enrollment, with each pupil a demand unit. This does not assume that there is necessarily a linear relationship between total population or school enrollment and needed services. The relationship is obviously not exact and is used only to express the demand for public services in easily manipulated and understandable units. In some governmental functions there may be economies of scale, in other functions the opposite may be true. Different communities may desire different levels of quality as well as quantity of governmental services. This, however, may mean a difference in the extent and level of need satisfaction rather than of need. Hence, units of demand for public service may be used in several types of analysis and are particularly appropriate in relating the demand for municipal and school services.

Taxable Resources

A study of the impact of changes in state allocations of revenue requires not only units for expression of public service demands but bases for expressing taxable resources. A number of usable possibilities are available. For this study equalized valuation of property was selected as a measure of local taxable resources because of its accessibility and stability and because it is the most used tax base at the local level and in school support in Wisconsin.

Trends

This section covers the developments in Wisconsin since 1925 of a number of elements in educational finance. These elements are population, school enrollments, total and per capita equalized valuations, categories of assessment, effects of inflation and population growth, and property tax revenues.

Population

Since the impact resulting from changes in state support and service demand units in this study are expressed on a per capita basis, population changes require examination. Wisconsin's population has shown a steady increase from 2.8 million in 1925 to 4.0 million in 1961. This is an increase of 43.7 percent over the 36-year period. Each decade since 1930 has been one of more rapid growth in terms of total numbers. From 1930 to 1940 population increased by 198,600; from 1940 to 1950 by 297,000; and from 1950 to 1960 by 517,000. Table 4.1 shows the percent of change as being uniform during the years of each decade. This is because population data were available only for the census years and were interpolated in the intervening years on the assumption that population growth was constant during the decade.

TABLE 4.1

WISCONSIN POPULATION 1925-1961

Year	Population	Percent of change over previous year
1925	2,785,536	
1926	2,816,230	1.1
1927	2,846,924	1.1
1928	2,877,618	1.1
1929	2,908,312	1.1
1930	2,939,006	1.1
1931	2,958,865	0.7
1932	2,978,724	0.7
1933	2,998,583	0.7
1934	3,018,442	0.7
1935	3,038,301	0.7
1936	3,058,160	0.7
1937	3,078,019	0.7
1938	3,097,878	0.6
1939	3,117,737	0.6
1940	3,137,587	0.6
1941	3,167,286	0.9
1942	3,196,985	0.9
1943	3,226,684	0.9
1944	3,256,383	0.9
1945	3,286,082	0.9
1946	3,315,781	0.9
1947	3,345,480	0.9
1948	3,375,179	0.9
1949	3,404,878	0.9
1950	3,434,575	0.9
1951	3,486,295	1.5
1952	3,538,015	1.5
1953	3,589,735	1.4
1954	3,641,455	1.4
1955	3,693,175	1.4
1956	3,744,895	1.4
1957	3,796,615	1.4
1958	3,848,335	1.3
1959	3,900,055	1.3
1960	3,951,777	1.3
1961	4,003,495	1.3
Total Increase 1925-1961	1,217,959	43.72

Trends in School Enrollment

The trend in public school enrollments should be examined since the impact of changes in state support and educational demand units are expressed on a per pupil basis. The pattern of school enrollment does not show a continuing upward trend as does total population. As a matter of fact, Wisconsin experienced a period of decreasing school enrollments for more than a decade from 1934 to 1946. Total public school enrollments from 1925 to 1961 are presented in Table 4.2.

In 1925 there were 513,864 pupils in the public schools. The enrollment fluctuated but generally increased until a high for the pre-depression period of 552,608 students was reached in 1933. Then the period of decreasing school enrollments began and continued to a low of 484,356 in 1946. Enrollments began increasing again in 1947 with very rapid increases in recent years.

These enrollment changes have not been consistent or predictable. Percentage changes in enrollment from year to year have varied from -3.2 percent in 1944 to 6.9 percent in 1953. Since 1952, the annual percent of increase has been larger than at any other time.

The changing proportion of the total population enrolled in public schools is important in an analysis of the impact of state support when expressed as per-capita and per-pupil units. Because population increased while enrollments declined, the proportion of the population enrolled decreased. In 1925, 18.45 percent of the population was enrolled in public schools and in 1950, 14.54 percent was enrolled. This represented the low mark in percent of total population enrolled in school. With 17.68 percent of the total population in public schools in 1960, the proportion has not yet returned to the 1925 level. Increases in the number and percent of chilren in private and parochial schools is partly responsible for this phenomenon.

In order to indicate changes in public service demand units, trends in population and total public school enrollments in Wisconsin have been reviewed. It can be concluded that with the exception of the period of decreasing school enrollments from 1934 to 1946, the demand for goods and services from the public sector of the economy, as measured by population and school enrollment, has increased. In fact, in 1961 the public service demand units were higher in both population and enrollment than at any point in the history of Wisconsin.

The impact of this increase and the impact of shifts in state support, as well as changes in the equalized valuations of property over a period of time, and the varying proportion of property values which appear in each assessment category, are shown in the following section.

Trends in Equalized Valuations

Equalized valuation of property in Wisconsin increased from $5.2 billions in 1925 to $19.7 billions in 1961; an increase of 279 percent. This figure may be compared to an increase of 43.72 percent in total population and 40.58

TABLE 4.2

WISCONSIN PUBLIC SCHOOL ENROLLMENT 1925-1961

Year	Public school enrollment	Percent of change over previous year
1925	513,864	
1926	513,456	-0.1
1927	520,149	1.3
1928	518,035	-0.4
1929	521,995	0.8
1930	528,130	1.2
1931	541,283	2.5
1932	548,386	1.3
1933	552,608	0.8
1934	552,312	-0.1
1935	549,891	-0.4
1936	548,568	-0.2
1937	546,316	-0.4
1938	540,431	-1.1
1939	537,653	-0.5
1940	535,165	-0.5
1941	529,929	-1.0
1942	519,847	-2.1
1943	506,955	-2.5
1944	490,796	-3.2
1945	485,537	-1.1
1946	484,356	-0.2
1947	487,288	0.6
1948	490,795	0.7
1949	497,647	1.4
1950	499,329	0.3
1951	503,891	0.9
1952	515,458	2.3
1953	550,944	6.9
1954	572,797	4.0
1955	592,222	3.4
1956	610,827	3.1
1957	628,559	2.9
1958	653,852	4.0
1959	674,845	3.2
1960	698,509	3.4
1961	722,363	3.4
Total Increase 1925-1961	208,499	40.58

percent in public school enrollment. This increase in total valuations has not been steady during the period. During the depression years, the total decreased. Beginning in 1940, continuous yearly increases have occurred. As has been true with population and school enrollments, a more rapid increase in valuations has occurred in recent years. In the five-year period between 1945 and 1950 the increase was $3.9 billion; the increase from 1956 to 1961 was 4.6 billion. Table 4.3 shows the trend in equalized valuations of property in Wisconsin.

Trends in Assessment Categories

A change has occurred in the various assessment categories of property subject to taxation, indicating a changing tax effect on different types of property. The Wisconsin Department of Taxation classifies property as personal, residential, mercantile, manufacturing, agricultural, swamp or cut-over, and timber. The most significant change has taken place in the residential and agricultural categories. In 1927, residential property constituted 30.7 percent of the total equalized valuations in the state. This percentage increased each year to 49.6 percent in 1961. At the same time, agricultural property has decreased from 26.6 percent of the total in 1927 to 12.3 percent in 1961. The value of manufacturing property doubled but was still only approximately 10 percent of the total in 1961. The percent in the other categories has remained relatively constant. Graph I shows the percent in the various classifications composing the total equalized valuation of property.

As important implication of this change is that the burden of the property tax payments has shifted from farm to residential property. Since almost half the property tax base is residential and that nearly half the property tax is for education, the impact of any changes in state support programs will be strongly felt by the home owner.

Trends in Revenue from Property Tax

Total property tax revenues have increased substantially from $104,119,726 in 1925 to $481,382,283 in 1961. With the exception of the period between 1931 and 1935, this increase has been steady. Property taxes for school purposes have also increased from $36,864,846 in 1925 to $219,090,260 in 1961. The amount of school revenue from the property tax remained comparatively constant through the thirties and forties but has increased rapidly since 1959. Table 4.4 shows actual property tax collections, the percent of change over the previous year, and the percent of the total allocated for school purposes.

The percent of the property tax allocated to education has increased over the years. The percent of the property tax allocated to education in 1925 was 35.4 percent of the total, while in 1961 this had increased to 45.5 percent. The percentage of total tax revenue for school purposes has increased over this period. Of all local and state taxes, 29.8 percent was allocated to education in 1925, while in 1961 the percent so allocated was 33.9.

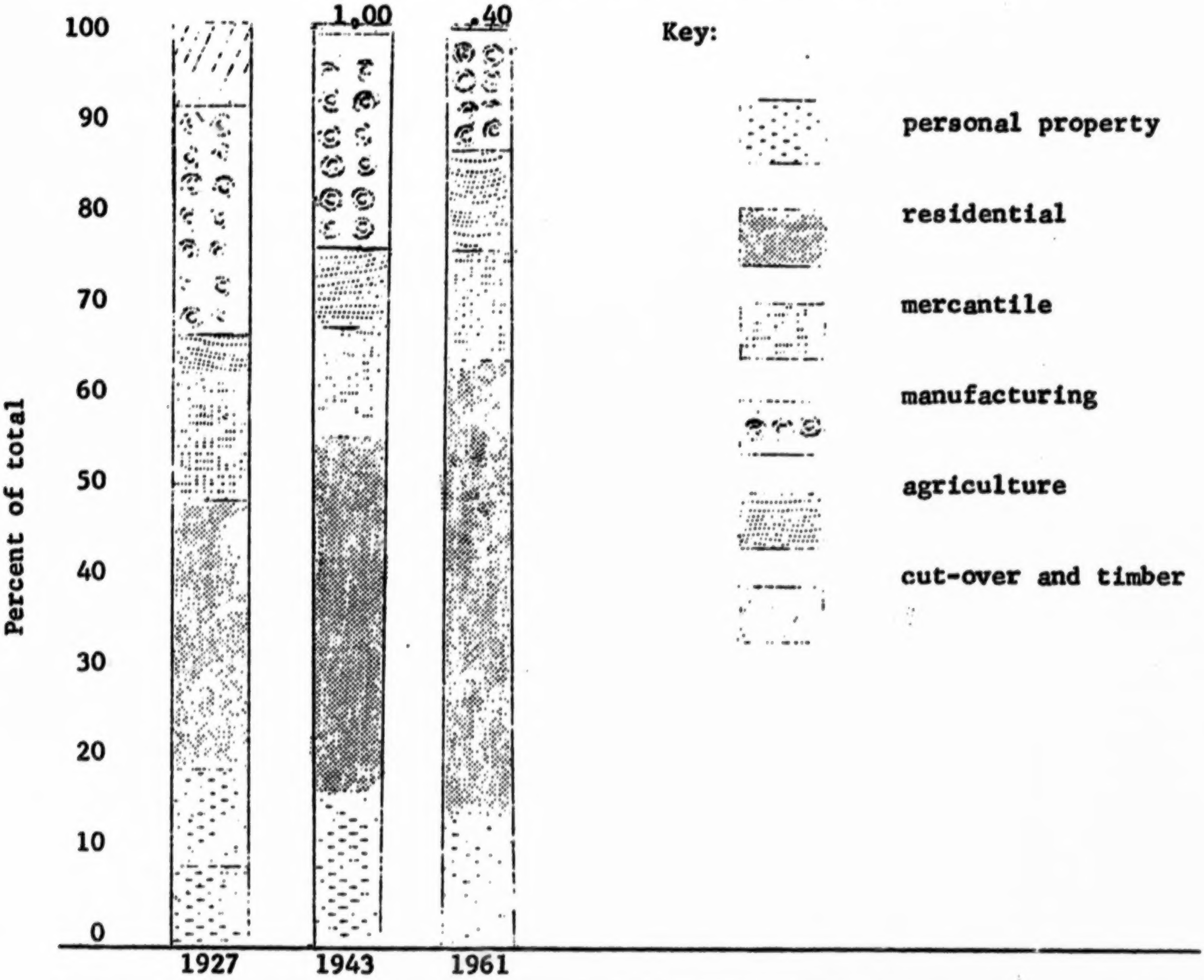
TABLE 4.3

EQUALIZED VALUATION IN ACTUAL DOLLARS AND PERCENT OF CHANGE 1925-1961

Year	Equalized valuation actual dollars	Percent of change over previous year
1925	$ 5,198,660,917	
1926	5,483,276,041	5.5
1927	5,619,049,166	2.5
1928	5,871,689,270	4.5
1929	5,975,697,488	1.8
1930	5,896,512,880	-1.3
1931	5,250,618,383	-10.9
1932	4,840,707,667	-7.8
1933	4,262,713,949	-11.9
1934	4,133,680,423	-3.0
1935	4,221,550,886	2.1
1936	4,267,795,401	1.1
1937	4,349,914,635	1.9
1938	4,197,775,909	-3.5
1939	4,393,180,305	4.7
1940	4,353,511,969	-0.9
1941	4,416,232,590	1.4
1942	4,626,325,861	4.8
1943	4,807,363,225	3.9
1944	5,015,668,373	4.3
1945	5,328,909,216	6.2
1946	5,827,999,451	9.4
1947	6,540,774,454	12.2
1948	7,928,898,875	21.2
1949	8,488,903,730	7.1
1950	9,200,753,935	8.4
1951	10,418,525,010	13.2
1952	11,967,582,927	14.9
1953	12,813,036,000	7.1
1954	13,244,709,775	3.4
1955	13,963,594,850	5.4
1956	15,061,301,975	7.9
1957	16,251,569,235	7.9
1958	17,144,867,025	5.5
1959	17,940,202,150	4.6
1960	18,844,251,120	5.0
1961	19,682,182,516	4.4
Total Increase 1925-1961	14,483,521,599	278.6

GRAPH I

PERCENT OF EQUALIZED VALUATION IN EACH ASSESSMENT CATEGORY, 1927, 1943 and 1961



Effects of Inflation and Population Growth

To secure a valid picture of the economic impact of changing state support, the factors of inflation and increasing service demand units must be considered. This was done with the use of per-capita and per-pupil figures to hold population increases and growth in school enrollments constant. Constant dollars were used to reduce inflationary effects. Constant dollars were calculated by use of the implicit price deflator for government purchases of goods and services (state and local).[3] The price deflators reported 1954 = 100 were converted to 1960 = 100. Price deflator figures for 1925 through 1928 were not available. These were calculated by establishing a ratio between the implicit price deflators and reported consumer price indices.[4] An average of the ratio of price deflator to consumer price index from 1929 through 1932 was found. This ratio was then

TABLE 4.4

REVENUE FROM PROPERTY TAX, PERCENT OF CHANGE EACH YEAR, AND PERCENT ALLOCATED TO EDUCATION

(Actual Dollars)

Year	Revenue from Property Tax	Percent of Change Over Previous Year	Percent Allocated to Education
1925	$104,119,726		35.4
1926	99,948,768	-4.0	37.4
1927	105,584,287	5.6	36.9
1928	111,094,527	5.3	33.3
1929	117,520,468	5.8	30.9
1930	122,253,862	4.0	29.1
1931	120,855,119	-1.1	34.1
1932	106,472,737	-11.9	37.0
1933	94,304,494	-11.4	35.2
1934	90,269,379	-4.3	32.8
1935	91,538,981	1.4	33.8
1936	93,956,021	2.6	34.5
1937	98,991,277	5.4	34.1
1938	106,261,011	7.3	33.2
1939	110,834,995	4.3	32.8
1940	109,719,278	-1.0	29.8
1941	110,009,328	0.3	29.9
1942	113,241,772	2.9	30.1
1943	110,138,028	-2.7	32.8
1944	107,345,430	-2.5	37.1
1945	112,060,333	4.4	38.9
1946	126,461,235	12.9	37.9
1947	146,289,568	15.7	38.0
1948	171,233,651	17.1	39.4
1949	194,621,342	13.7	38.5
1950	209,355,996	7.6	38.0
1951	225,610,044	7.8	38.1
1952	246,310,477	9.2	38.8
1953	268,439,322	9.0	39.5
1954	281,602,568	4.9	40.3
1955	299,844,273	6.5	41.0
1956	322,128,076	7.4	41.6
1957	349,346,651	8.4	43.0
1958	381,516,686	9.2	43.6
1959	414,206,065	8.6	44.2
1960	447,047,860	7.9	44.6
1961	481,382,283	7.7	45.5
Total Increase 1925-1961	377,262,557	362.3	10.1

applied to consumer price index figures for 1925 through 1928 and the results used as price deflators for that period. In the remainder of this chapter all comparisons are made in constant dollars and on per-capita or per-pupil unit bases.

Per-Capita Equalized Valuations

Because of a combination of increasing population and decreasing valuation, per-capita valuations exhibited an almost constant annual decrease. The low was reached in 1942. Valuations began to increase at this point, and in 1961 the per-capita total in actual dollars was the highest on record. Much of this increase was the result of inflation. In constant (1960) dollars, the 1925 per-capita valuation was $4,834, the 1947 low point was $3,394, and the 1961 amount was $4,773. Thus the valuation of property with population and inflation held constant was actually lower in 1961 than in 1925. Table 4.5 presents the trends in total per-capita valuations from 1925 to 1961. It is shown that inflation and population growth have combined to prevent the property tax base from maintaining a constant base for each public service demand unit. Another related factor preventing increases in the property tax base is the continued legislative exemption of certain types of property from taxation.

Revenue from the Property Tax

Although the per-capita valuations have not kept pace with population increases and inflation, more revenue is being produced from the property tax base than in prior years. In 1925, the total property tax levied for all purposes was $96.84 per capita in constant (1960) dollars. The per-capita levy decreased each year beginning in the 1930's to a low of $73.81 in 1945. At this point an annual increase began and continued until 1961 when the yield from the property tax was $116.74 per capita.

Table 4.6 presents information on the trend in property taxes as well as the property tax for school purposes. Education has been receiving an increasingly larger amount from the property tax. Property taxes for school purpose have increased in constant dollars from $34.29 per capita in 1925 to $53.13 per capita in 1961. All of the increase in the property tax for education is not accounted for by increased enrollments; expenditures per pupil also increased during this period. In 1925, the average current expenditure per pupil in Wisconsin was $179.40 in constant (1960) dollars; in 1961 it was $367.78. With the exception of the three-year period including 1933, 1934, and 1935 and a two-year period in 1942 and 1943, the expenditure level has increased steadily. Table 4.7 presents information about school expenditures for 1925 through 1961 showing the expenditures per pupil, state support per pupil, and the percent state support was of total current expenditures.

As the impact of substantial changes in state support is studied, it must be considered within the following framework:

1. Population growth has been continuous over the entire period studied (1925-1961). This means that the same amount of revenue,

TABLE 4.5

TOTAL AND PER-CAPITA EQUALIZED VALUATION IN CONSTANT DOLLARS, 1925-1961

Year	Equalized Valuation	Equalized Valuation Per Capita
1925	$13,468,033,463	$4,834
1926	14,023,723,890	4,980
1927	14,082,829,989	4,947
1928	14,752,988,115	5,128
1929	16,107,001,315	5,539
1930	16,110,690,928	5,481
1931	15,175,197,638	5,130
1932	15,127,211,459	5,078
1933	12,878,289,876	4,296
1934	11,981,682,385	3,968
1935	12,096,134,343	3,980
1936	12,552,339,414	4,106
1937	12,322,704,348	4,003
1938	12,028,011,200	3,977
1939	12,770,872,979	4,096
1940	12,338,560,818	3,932
1941	11,871,592,983	3,747
1942	11,536,972,221	3,608
1943	11,338,120,813	3,514
1944	11,399,246,302	3,500
1945	11,534,435,532	3,511
1946	11,495,067,950	3,467
1947	11,355,511,204	3,394
1948	12,408,292,449	3,676
1949	12,901,069,498	3,789
1950	13,650,970,229	3,975
1951	14,350,585,413	4,116
1952	15,684,905,543	4,434
1953	16,322,338,853	4,546
1954	16,453,055,602	4,518
1955	16,966,700,911	4,594
1956	17,232,610,961	4,602
1957	17,664,749,195	4,652
1958	18,161,935,646	4,719
1959	18,514,140,505	4,747
1960	18,844,251,120	4,769
1961	19,108,915,110	4,773
Total Increase 1925-1961	5,640,881,647 or 41.9%	-61

TABLE 4.6

PER CAPITA PROPERTY TAX AND PROPERTY TAX FOR SCHOOL PURPOSE, IN CONSTANT DOLLARS,, 1925-1961

Year	Total Property Tax Per Capita	Property Tax Per Capita for School Purpose
1925	$ 96.84	$34.28
1926	90.77	33.95
1927	92.93	34.27
1928	97.01	32.33
1929	108.92	33.66
1930	113.66	33.08
1931	118.06	40.26
1932	111.66	41.28
1933	95.02	33.41
1934	86.70	28.46
1935	86.03	29.16
1936	90.35	31.19
1937	91.13	31.08
1938	98.28	32.64
1939	110.35	36.16
1940	99.02	29.51
1941	93.36	27.90
1942	88.33	26.55
1943	80.50	26.36
1944	74.91	27.76
1945	73.81	28.71
1946	75.23	28.51
1947	75.92	28.84
1948	79.39	31.31
1949	86.87	33.47
1950	90.45	34.38
1951	89.13	33.98
1952	91.25	35.35
1953	95.27	37.60
1954	96.06	38.75
1955	98.65	40.43
1956	98.42	40.95
1957	100.02	43.02
1958	105.02	45.83
1959	109.60	48.41
1960	113.13	50.42
1961	116.74	53.13
Total Increase 1925-1961	$19.90 or 20.5%	$18.84 or 54.9%

TABLE 4.7

SCHOOL EXPENDITURES AND STATE SUPPORT OF EDUCATION, 1925-1961

Year	Expenditures Per Pupil[a]		State Support Per Pupil		State Support as Percent of Total Current Expenditures
	actual dollars	constant dollars	actual dollars	constant dollars	
1925	$ 69.25	$179.40	$ 8.94	$23.16	12.9
1926	71.40	182.61	9.37	23.96	13.1
1927	73.99	185.44	9.67	24.24	13.1
1928	78.01	196.00	11.94	30.00	15.3[b]
1929	79.82	215.15	14.06	37.89	17.6
1930	81.37	222.32	14.24	38.90	17.5
1931	81.10	234.39	13.47	38.93	16.6
1932	78.72	246.00	12.09	37.78	15.4
1933	68.65	207.40	10.18	30.76	14.8
1934	64.69	187.51	10.34	29.97	16.0
1935	62.05	177.79	11.61	33.27	18.7
1936	75.66	222.53	12.26	36.06	16.2
1937	73.82	209.12	12.18	34.50	16.5[b]
1938	77.60	222.34	14.02	40.17	18.1[b]
1939	80.38	233.66	14.13	41.08	17.6[b]
1940	82.73	234.36	14.52	41.13	17.6[b]
1941	84.74	227.80	13.74	36.94	16.2
1942	88.20	219.95	14.18	35.36	16.1
1943	94.46	222.78	14.20	33.49	15.6
1944	106.31	241.61	18.16	41.27	17.1
1945	116.90	253.03	18.08	39.13	15.5
1946	127.15	250.79	18.73	36.94	14.7
1947	145.59	252.76	18.67	32.41	12.8
1948	167.76	262.54	28.64	44.82	14.5
1949	185.53	281.96	26.81	40.74	14.5
1950	201.25	298.59	35.12	52.11	17.4
1951	220.16	303.25	43.03	59.27	19.5
1952	239.39	313.75	44.82	58.74	18.7
1953	241.96	308.23	42.77	54.48	17.7
1954	252.83	314.07	44.94	55.83	17.8
1955	263.45	320.11	44.93	54.59	17.1
1956	278.70	318.88	50.88	58.22	18.3
1957	295.95	321.68	54.28	59.00	18.3
1958	314.44	333.09	65.25	65.94	20.7
1959	337.35	348.14	67.74	69.91	20.1
1960	355.70	355.70	84.94	84.94	23.9
1961	378.81	367.78	90.88	88.23	24.0

[a] In this report, per-pupil expenditure is determined by dividing the total expenditures for current operation and transportation as reported by the Department of Public Instruction by the total net enrollment. Net enrollment was used because this is the only measure reported consistently since 1925.

[b] Estimated from appropriations

valuation, etc., would be shown as a decreasing amount of revenue expressed on a per-capita basis.

2. During this period, school enrollments showed both a decline and an increase. It is obvious that when enrollments decline, the same amount of total revenue would show an increase on a per-pupil basis. When enrollments increase the same amount of money would show a decrease on a per-pupil basis.

3. Equalized value of property fluctuated drastically during the years studied. When expressed on a per-capita basis, it is influenced not only by the change in population, but by economic conditions which affect the rise or fall of property values. To make a valid comparison, per-capita valuations in constant dollars must be used. Because prices have increased markedly in recent years, the same number of "actual dollars" buys fewer goods and services than in previous years.

4. Because of changes in valuation in the different assessment categories, even the same rate on equalized valuation on a per-capita basis in constant dollars does not reveal the true impact. More information regarding the changing percent in the several categories is needed to understand the impact on farmers, home owners, etc., of changes in the property tax.

5. Revenue from the property tax has fluctuated over the years but nearly five times as much in actual dollars is now secured from that base as in 1925. Schools receive a much larger percent of property taxes collected now than formerly. The percent schools receive from the property tax appears to be increasing each year, and reached 45.5 percent of the total in 1961. If present trends continue, one-half the property tax revenue will soon be allocated to schools.

Impact of Changes in State Support of Education

Trends in public service demand units as measured by population and school enrollment and trends in taxable resources as measured by equalized valuation of property and property tax revenue have been discussed.

With the background material presented, it is appropriate to make a specific analysis of the impact of state support changes over the years. State support of education and state support of local governments will each serve as a base from which the impact will be analyzed. The influence of substantial changes in state support of education and of local governments will be analyzed in relation to:

1. Current expenditures per pupil

2. Property tax per captia for education

3. Total property tax per capita

4. Effective property tax rate for school purposes
5. Effective property tax rate for other purposes
6. Percent of total current school expenditures drawn from state sources
7. Percent of property taxes devoted to education
8. Percent of total tax revenue devoted to education

The effect of population and enrollment increases will be controlled by the use of per-capita and per-pupil totals; the effect of inflation will be controlled by the use of constant (1960) dollars. In the following analysis the term "state support" includes both shared taxes and state aid unless otherwise designated.

Limitations

Several difficulties are apparent in an analysis of the impact of increases in state support upon the eight factors presented above. Most changes in distribution of state support and tax patterns are gradual, with large changes occurring only over a period of several years; thus few points of substantial change from one year to the next can be identified. The effect of a change in one factor, such as shared taxes, is not always reflected in changes in related factors, such as the property tax, in the same time period although it may be evident over a period of years. Finally, some changes, particularly in state support to local and county units of government, seem to be dependent on other variables not identified or isolated in this analysis.

State Support of Education

Most state revenue for education in Wisconsin is distributed through the state support program in the form of state aid. In 1961, only $1.8 millions were distributed to schools as shared taxes, amounting to only $2.42 (constant dollars) per pupil. Since this has been an insignificant amount over the years, it is not included in subsequent analyses. Thus, the amount of state support is in reality the state aid to schools. The gross amount of state aid to schools has increased from $4.6 millions in 1925 to $65.7 millions in 1961, an astronomical increase of 1,328 percent! When the effects of inflation and enrollment increases are considered, the results are not so impressive, but still represent a substantial increase in state support of education. The per-pupil amount of state support in 1925 was $23.16 (constant dollars). This increased to a total of $88.23 in 1961, an increase of 281 percent. State support of education and changes in per-pupil expenditures from 1925 to 1961 are summarized in Table 4.7.

For the purpose of identifying points of substantial changes, shifts in state support of approximately $7.00 or more per pupil were arbitrarily used. This permitted analysis of change in six different points in time. The first increase of this size occurred between 1928 and 1929, as Table 4.8 shows. In this period, state aid to schools increased by $7.89 per

TABLE 4.8

IMPACT OF CHANGES IN STATE SUPPORT OF EDUCATION

Year	State Support of Schools Per Pupil	Total Current Expenditure Per Pupil	Property Tax Per Capita For Schools	Total Property Tax Per Capita	Effective Tax Rate[a]		Percent of Current Expenditure From State Sources	Percent of Total Property Tax For Schools	Percent of Total Tax Revenue For Schools
					Schools	Other			
1928	$30.00	$196.00	$32.33	$ 97.01	$ 6.30	$12.62	15.3	33.3	27.3
1929	37.89	215.15	33.66	108.92	6.08	13.58	17.6	30.9	28.2
1932	37.78	246.00	41.28	111.66	8.13	13.86	15.4	37.0	29.4
1933	30.76	207.40	33.41	95.01	7.77	14.35	14.8	35.2	28.2
1943	33.49	222.78	26.36	80.50	7.50	15.41	15.6	32.8	22.0
1944	41.27	241.61	27.76	74.91	7.93	13.47	17.1	37.1	22.1
1947	32.41	252.76	28.84	75.92	8.50	13.87	12.8	38.0	25.6
1948	44.82	262.54	31.31	79.39	8.52	13.08	14.5	39.4	27.2
1949	40.74	281.96	33.47	86.87	8.83	14.10	14.5	39.0	26.2
1950	52.11	298.59	34.38	90.45	8.65	14.10	17.4	38.0	27.2
1959	69.91	348.14	48.41	109.60	10.19	12.90	20.1	44.2	32.7
1960	84.94	355.70	50.42	113.13	10.57	13.15	23.9	44.6	33.3

[a] Found by using levy in constant dollars and by using equalized valuation in constant dollars as tax base

pupil, from $30.00 in 1928 to $37.89 in 1929. All of this increase in support was absorbed in increases in current expenditures per pupil which rose from $196.00 to $215.15, for an increase of $18.85. While state support of education was increasing, property taxes for schools were also increasing. Schools received $32.33 per capita from the property tax in 1928 and $33.66 in 1929. This represented 33.3 percent of the property tax. The total property tax also increased from $97.01 per capita in 1928 to $108.92 per capita in 1929; an increase of $11.91. The only item to decrease during this period was the effective tax rate for school purposes. This was calculated by dividing equalized valuation in constant dollars into property tax collections in constant dollars. The use of constant dollars controlled the effect of inflation on the value of property. Effective tax rates for school purposes on each $1,000 of valuation decreased from $6.30 in 1928 to $6.08 in 1929 calculated by the same method. Property tax for other purposes increased from $12.62 to $13.58. The large increase in per-pupil expenditures expanded the percent from state sources only 2.3 percent (from 15.3 percent to 17.6 percent). Increased state support during this period appears to have cushioned the substantial increase in per-pupil expenditures which otherwise might have resulted in a larger property tax increase. Total property taxes increased substantially more than property taxes for schools which indicates either (1) that other demands upon the community were increasing more rapidly than education demands or (2) that increased state support for education may have served to some extent as a substitute for local effort in school support and may have created some tax "leeway" for other governmental functions.

A second point of substantial change in state support of education is found between 1932 and 1933. Because of the great depression, as might be expected, state support decreased from $37.78 per pupil in 1932 to $30.76 in 1933, a decrease of $7.02 per pupil. Per-pupil expenditures decreased from $246.00 in 1932 to $207.40 in 1933, a decline of $38.60. Property tax for school purposes also suffered a decrease from $41.28 per capita to $33.41. Property taxes for all purposes decreased from $111.66 in 1932 to $95.01 in 1933, a reduction of $16.65 per capita. It is interesting to note that because of rapidly decreasing equalized valuations, effective tax rates for schools declined only slightly during this period. The effective tax rate for other purposes actually increased. Smaller percentages of the property tax and of total tax revenue were allocated to education in this period which would indicate that the decline in all public services was not shared proportionally between the various functions of the public sector of the economy; i.e., the demand for education during this period was more elastic than for other public services. The impact of changed state support of education during this period was perhaps reflected in a greater reduction in per-pupil expenditures than would have been true if state support had not been reduced. Whether it had any effect on other governmental expenditures appears impossible to ascertain. General reduction, even in constant dollars, was the pattern of the day.

The next point of substantial change in state support of education, 1943 to 1944, appeared in an economic climate completely different from that of the great depression. In the early 1940's the war effort had caused a period of rapid inflation. From 1943 to 1948 the implicit price deflator increased by 21.5 points compared with an increase of only 3.5 points from 1930 to 1942.

In 1943 the state was supporting education at a level of $33.49 per pupil in constant dollars. In 1944 this had increased by $7.78 to $41.27 per pupil. Once again per-pupil expenditures increased more than state support. Total expenditures were $222.78 per pupil in 1943 and $241.61 in 1944, an increase of $18.83 per pupil. Property tax for education increased during this period from $26.36 to $27.76 per capita. Total property tax decreased substantially, $5.59 per capita, from $80.50 in 1943 to $74.91 in 1944. The changes in property tax are reflected in the effective tax rates for schools which increased from $7.50 to $7.93 per thousand of constant-dollar valuation. The effective tax rates for other purposes decreased from $15.41 to $13.47. The percent of total expenditures from state sources increased from 15.6 percent in 1943 to 17.1 percent in 1944. The percent of property taxes devoted to education increased from 32.8 percent in 1943 to 37.1 percent in 1944. The percent of total tax revenue for education increased only slightly, from 22

In viewing the influence of changed state support during this period, it is apparent that all of the increase in state support was absorbed in increased per-pupil expenditures. In fact, state support produced less than half the increased expenditure per pupil. A relatively small increase in property taxes for education was needed to provide the balance because of the influence of several factors:

1. With enrollments declining and near an all-time low for the past 36 years, a small increase in local taxes produced a large amount per pupil.

2. With population increasing, an expanded amount of money was available with even a small increase in the per-capita amount.

3. Since building materials were very difficult to obtain, property tax revenue which under other circumstances would have been used for capital outlay expenditures was diverted to current expenditures.

During this period, property taxes for all purposes declined. This decline was due largely to a minor increase in shared taxes to localities and expenditures not keeping pace with inflation, thus showing a lag when expressed in constant property tax dollars.

The fact that many changes in state support programs result from experiences of previous years and are not annual developments is well illustrated in 1943 and 1944. The $33.49 per-pupil level of state support in 1943 was the lowest since the post-depression level of $33.27 in 1935. During the period from 1935 through 1943 state support reached a high of $41.43 and for three years was higher than $40.00 per pupil. At the same time, per-pupil expenditures were not keeping pace with inflation. The 1943 level of $222.78 per pupil expressed in constant dollars was lower than three of the previous four years.

Per-pupil expenditures increased considerably more than the increase in state support from 1943 to 1944 which indicated a willingness on the part of the local level also to increase their participation in financing improved educational programs. There appears to be no "substitution effect" of state support for local effort.

The next period of substantial change in state support of education is significant because for the first time total per-pupil expenditures did not increase as much as the increase in state aid. Between 1947 and 1948 state support increased $12.41 per pupil, from $32.41 in 1947 to $44.82 in 1948. Total expenditures per pupil, however, increased only $9.78, from $252.76 to $262.54. This indicates that some of the state support was used for purposes other than increasing total expenditures. When state support per pupil increased more than expenditures per pupil in average daily attendance, it was expected that property taxes for education might decrease. Such was not the case. Property taxes for education increased from $28.84 to $31.31 per capita.

An increase in capital outlay and debt service during this period could explain the increase in property tax revenue for education. During 1947 and 1948 building supplies were again becoming available and enrollments were on the increase. Total capital outlay and debt service in 1947 was $20,939,755 (constant dollars). This had risen to $26,217,369 in 1948, an increase of 25.2 percent. Local property taxes for all purposes also increased in this period. In [illegible]47, the level was $75.92 per capita and $79.39 per capita in 1948. Education received a larger share of the property tax as well as of total revenue.

The effective tax rate for education remained almost constant but declined for other purposes. The percent of current expenditures from state sources increased from 12.8 to 14.5 percent. Much of the impact of this change in state support resulted in improved educational programs as illustrated by increased expenditures per pupil. However, some of the impact resulted in releasing revenue in the local community for building needs. Apparently other demands for public services increased only slightly during this time since most of the increase in the property tax is accounted for by increases in the property tax for school purposes.

Another point of increase in state school support due in part to a change in the distribution formula came immediately after the one described above. In 1949 per-pupil state aid was $40.74; this was increased by $11.37 in 1950 to the level of $52.11. Once again all of the increased aids were absorbed in current expenditures, as the total per-pupil expenditures increased by $16.63, from $281.96 in 1949 to $298.59 in 1950. During this period property tax per capita for education and total property tax per capita increased, with proportionately less increase in the tax for education. It is interesting to note that at this point equalized valuation is beginning to "catch up" after the depression years. Even with increased property tax, the effective tax rate decreased for education and held constant for other purposes. The percent of total expenditures from state sources increased from 14.5 to 17.4 percent. Increasing demands on other segments of the public sector of the economy are indicated by the increasing property tax per capita and the fact that percent of the property tax used for education decreased from 39.0 percent in 1949 to 38.0 percent in 1950. Even with these increasing local demands, additional financial efforts to improve educational programs continued. This is shown in the fact that percent of all revenue devoted to education increased from 26.2 to 27.2.

A final point of substantial change analyzed in state suppor of education is of recent origin. From 1959 to 1960, state support increased $15.83 per pupil. For the second time since 1925 total per-pupil current expenditures did not increase by as much as state support. Once again, state support was used for purposes other than increasing current expenditures per pupil. The increase in state aid did not reduce property taxes for education. These taxes increased $2.01 per capita. Total property taxes increased from $109.60 per capita in 1959 to $113.13 in 1960. This indicates that demands for other municipal services were also increasing at approximately the same rate as the increase in property taxes for education. The effective tax rate increased slightly, both for schools and for other purposes. Education received greater shares of its support from state sources, increasing from 20.1 percent in 1959 to 23.9 percent in 1960. The percent of the property tax allocated to education increased slightly from 44.2 percent in 1959 to 44.6 percent in 1960. The percent of total tax revenue devoted to schools also increased, from 32.7 percent in 1959 to 33.3 percent in 1960.

Once again it can be concluded that the increased state support of education was accompanied by increased per-pupil expenditures, though in a lesser amount than the increase in state aid. A further influence appears to be the release of local revenue to support capital outlay and debt retirement which reached a level of $106,267,068 in 1960. Revenue was released to other public functions since the total property tax increase was greater than the increase for schools. The changes discussed above are presented in summary in Table 4.9. This table indicates a very close relationship between increased state support of education and increased per-pupil expenditures. In every instance where state support increased, per-pupil current expenditures increased also. In the one period when state support declined substantially, per-pupil expenditure for current expenses declined much more. In three of the five periods studied, the increases in per-pupil expenditures were greater than increases in state support; in the other two, state support increased more than per-pupil current expenditures. Thus, assuming a predetermined level of current expenditure per pupil, state support became a substitute for local taxes and local effort in two of the five periods.

Increased state support per pupil is accompanied by increased current expenditures and also by increased property taxes for education. This is true even when the increase in state support is greater than the increase in per-pupil expenditures for current purposes. Increased level of expenditures for capital outlay and debt service probably accounted for the increased property tax for schools in instances when the increase in per-pupil state support was greater than increased current expenditures. When state support for schools and property taxes for schools increase, so do property taxes for other purposes. The only exception was found during the 1943 to 1944 period. Effective tax rates,both for school and other purposes, do not appear to follow a rational pattern. There may be a tendency for the effective tax rate for schools to decrease or remain virtually constant when state support of schools is substantially increased, although the pattern is not conclusive.

TABLE 4.9

IMPACT OF CHANGES IN STATE SUPPORT OF EDUCATION

Year	Change in State Support Per Pupil	Change in Current Expenditure Per Pupil	Change in Property Tax Per Capita		Effective Tax Rate		Percent of Current Expenditure from State Sources	Percent of Total Property Tax For Schools	Percent of Total Tax Revenue For Schools
			Schools	Total	Schools	Other			
1928-1929	$ 7.89	$18.85	$1.33	$11.91	Decreased	Increased	Increased	Increased	Increased
1932-1933	-7.02	-38.60	-7.87	-16.65	Decreased	Increased	Decreased	Decreased	Decreased
1943-1944	7.78	18.33	1.40	-5.59	Decreased	Decreased	Increased	Increased	Increased
1947-1948	12.41	9.78	2.47	3.47	Increased	Decreased	Increased	Increased	Increased
1949-1950	11.37	16.63	.91	3.58	Decreased	Same	Increased	Decreased	Increased
1959-1960	15.83	7.56	2.01	3.53	Increased	Increased	Increased	Increased	Increased

As state aids are increased the percent of all current educational expenditures from state sources increases in each instance in the year in which the change took place. When state aids decline (1932 to 1933) the percent of current expenditures from state sources also decreases. With one exception, increases or decreases in state support correspond with the percent of the property tax for schools, i.e., increased state support is accompanied by a higher percent of the property tax devoted to schools. Increased state support is also accompanied by a larger percent of all revenue devoted to education.

Impact of Changes in State Support of Municipal Government

In Wisconsin, state support of municipal functions is channeled through aids and shared taxes. Aid is distributed to local (city, village, or town) and county units of government for specific functions such as highways and welfare. Shared taxes generally are distributed to local and county governments in proportion to the amount of taxes collected from the communities. Local units receive proportionally more shared taxes and less state aid than county units. Because local units also receive more total support from state sources, and because state support of county units of government have shown no major changes over the years since official data have been available, only local units will be used as the base for analyzing fiscal changes. However, when points of substantial change of state support of local units have been identified, changes in state support of county units for the same year will be indicated. State aid and shared taxes have been combined to represent the total amount of state support.

Changes in shared taxes and aids per capita over a period of time are shown in Table 4.10. It is noted that since 1929 when official data became available, county aids have increased by less than six dollars per capita in constant dollars.

The bases used to analyze the impact of increased state support to localities are the same bases as were used to analyze the impact of increased state support of education; namely:

1. Current expenditures per pupil
2. Property tax per capita for education
3. Total property tax per capita
4. Effective property tax rate for school purposes
5. Effective property tax rate for other purposes
6. Percent of total current school expenditures drawn from state sources
7. Percent of property taxes devoted to education
8. Percent of total tax revenue devoted to education

TABLE 4.10

SHARED TAXES AND AIDS PER CAPITA TO LOCAL AND COUNTY UNITS, IN CONSTANT DOLLARS, 1925-1961

Year	Local Units	County Units
1925	\$ 7.75[a]	\$ 2.10[a]
1926	8.36[a]	.92[a]
1927	10.40[a]	2.15[a]
1928	2.65[a]	1.17[a]
1929	13.90	10.84
1930	16.38	11.54
1931	17.39	11.83
1932	24.90	14.31
1933	15.58	12.99
1934	17.55	11.47
1935	16.37	11.35
1936	20.61	15.27
1937	21.38	16.47
1938	21.51	18.92
1939	20.57	19.63
1940	22.22	20.41
1941	22.40	19.15
1942	25.33	21.58
1943	29.23	17.40
1944	30.10	16.56
1945	26.55	14.43
1946	24.15	13.15
1947	23.31	12.85
1948	25.49	13.14
1949	26.73	14.09
1950	24.53	14.44
1951	27.63	14.73
1952	29.44	15.86
1953	30.21	16.35
1954	30.61	16.39
1955	30.12	16.58
1956	32.94	17.02
1957	32.36	16.68
1958	32.38	16.24
1959	32.42	16.19
1960	34.19	16.57
1961	34.34	16.70

[a] Estimated

A change of approximately four dollars per capita or higher was established as the breaking point for analyzing the impact of change in state support of local government. The first analysis is of a three-year cycle of increasing-decreasing state support. In 1931, state support to local governments, as shown in Table 4.11 amounted to $17.39 per capita. This increased to $24.90 per capita in 1932 and dropped sharply to $15.58 in 1933. State support of county units of government went through the same cycle although the dollar change was much less pronounced. (See Table 4.10). In 1931, county units received $11.83 per capita from state sources; in 1932 this increased to $14.31 and decreased to $12.99 in 1933. Part of the explanation of this decrease is that during the depression years the economy had reached a low point and had reduced the tax revenue being collected and shared with localities and counties.

During this same period, school expenditures per pupil for current expenses decreased sharply from $246.00 in 1932 to $207.40 in 1933. School revenue from the property tax changed from $40.26 per capita in 1931 to $41.28 in 1932 and decreased to $33.41 in 1933. Revenue from property tax per capita decreased from $118.06 in 1931 to $111.66 in 1932 and to $95.01 in 1933. The effective tax rate for schools increased from 1931 to 1932 but decreased in 1933, dropping below the 1931 level. The effective tax rates for all other purposes declined throughout this three-year cycle. Property taxes for education decreased from 37.0 percent of the total in 1932 to 35.2 percent in 1933. Total tax revenue for schools decreased from 29.4 percent in 1932 to 28.2 percent in 1933. Thus schools received a smaller percent of less revenue, both from the property tax and from total tax revenue.

In summary, the impact of this decline in state support of local and county units of government was felt as part of the general decline of the entire economy. As indicated in the discussion of changing state support of education, the decreasing percent of tax revenue allocated to education seems to indicate that the demand for education is more elastic than the demand for other public services combined in a declining economy.

The next point of substantial change in state support of municipal government was between 1935 and 1936. During this time state support to local governmental units increased from $16.37 per capita to $20.61 per capita. State support of county units also increased, from $11.35 per capita in 1935 to $15.27 per capita in 1936. Total per-pupil expenditures increased from the 1935 level of $177.70 to the 1936 level of $222.53 per pupil in 1936. This large per-pupil increase was due to decreasing school enrollments and to increased revenue for school purposes. Property tax for education increased from $29.16 per capita in 1935 to $31.19 per capita in 1936. Because total property tax also increased, from $86.30 per capita in 1935 to $90.35 per capita in 1936, there was no increase in the percentage of property tax for education. The effective tax rates for both school purposes and other purposes increased slightly during this period. The percent of total per-pupil expenditures from state sources declined, but the percent of total tax revenue devoted to schools increased slightly, from 33.8 in 1935 to 34.5 in 1936. The impact of the increase in state support of local governments apparently resulted in more quality or quantity

TABLE 4.11

IMPACT OF CHANGES IN STATE SUPPORT OF LOCAL GOVERNMENT IN CONSTANT DOLLARS

Year	Local State Aid and Shared Tax Per Capita	Total Current Expenditures Per Pupil	Property Tax Per Capita for Schools	Total Property Tax Per Capita	Effective Tax Rate		Percent of Total Cur. Expen. from State Sources	Percent of Total Property Tax for Schools	Percent of Total Tax Revenue for Schools
					Schools	Other			
1931	$17.39	$234.39	$40.26	$118.06	$7.85	$15.16	16.6	34.1	28.7
1932	24.90	246.00	41.28	111.66	8.13	14.86	15.4	37.0	29.4
1933	15.58	207.40	33.41	95.01	7.78	14.38	14.8	35.2	28.2
1935	16.37	177.79	29.16	86.30	7.33	14.35	18.7	33.8	27.2
1936	20.61	222.53	31.19	90.35	7.60	14.40	16.2	34.5	27.2
1942	25.33	219.95	26.55	88.33	7.36	17.12	16.1	30.1	21.8
1943	29.23	222.78	26.36	80.50	7.50	15.41	15.6	32.8	22.0
1944	30.10	241.61	27.76	74.91	7.93	13.47	17.1	37.1	22.1
1945	26.55	253.03	28.71	73.81	8.18	12.84	15.5	38.9	23.2

of municipal functions because the property tax for non-school purposes as well as state support for municipal functions increased.

The next point of increase in state support is of interest because it was accompanied by a decrease in property taxes. Between 1942 and 1943, state support increased from $25.33 per capita to $29.23. At the same time state support of county units decreased from $21.58 per capita in 1942 to $17.40 per capita in 1943. Property tax for education, also decreased slightly, from $26.55 per pupil in 1942 to $26.36 per capita in 1943. Total property tax revenue decreased from $88.33 per capita in 1942 to $80.50 per capita in 1943. This period saw a slight increase in per-pupil current expenditures, from $219.95 in 1942 to $222.78 per pupil in 1943. This was due in part to decreasing school enrollment as there was no substantial change in school revenue. The effective tax rate for schools increased slightly; the effective tax rate for other purposes showed a sharp decline, probably reflecting the increase in state revenue to localities. The percent of current per-pupil expenditures from state sources declined, but both the percent of total taxes allocated to schools and the percent of the property tax devoted to schools increased during this period. The impact of this increase in state support of local government resulted in a direct decrease in property taxes. The decrease in property tax was much greater than the increase in state support. Since these amounts are expressed in constant dollars, the figures would indicate that expenditures for governmental functions during the early war years did not keep pace with inflation, thus reducing the "real dollar" property tax investment in governmental services.

The final point of change to be analyzed is between 1944 and 1945. This is of interest because it saw a decrease in state support, accompanied by a slight decrease in local revenue from the property tax. Since this was a period of relative prosperity, the opposite might be expected. In 1944, state support was at a level of $30.10 per capita; in 1945, this decreased to $26.55 per capita. State support of county units also declined, from $16.56 per capita in 1944 to $14.43 per capita in 1945. School expenditures for current expense showed a substantial increase, from $241.61 to $253.03. The tax for education increased slightly from $27.76 to $28.71 per capita.

Property tax revenue for all purposes showed a decline of approximately one dollar per capita from $74.91 in 1944 to $73.81 in 1945. Total tax revenue devoted to education increased from 37.1 percent in 1944 to 38.9 percent in 1945. Because of this slight increase in financial resources for education and continued decrease in enrollments, total per pupil expenditures increased from $241.61 in 1944 to $253.03 in 1945. The effective tax rate increased for schools but declined for other functions. The percent of school revenue from state sources decreased, but schools received a larger percent of property taxes and of total tax revenue. The impact of this decrease in state support apparently again resulted in a reduction of local municipal functions since per capita property taxes and the effective rate for local purposes also decreased. It is interesting to note that since 1945 there have been no substantial changes in the total amount of state support of municipal governments. State support has remained relatively stable, especially during more recent years.

To summarize, changes in state support to local units and in current educational expenditures per pupil do appear to accompany each other. In the five periods studied, a change in state support of municipalities has been accompanied by a change in per-pupil expenditures in the same direction (increase or decrease) in each instance except one. The only exception is from 1944 to 1945 when a decrease in per-capita shared taxes occurred while the increase in current expenditures per pupil was substantial. Changes in property tax per capita, either for education or for all purposes, do not appear to relate to changes in state support of municipalities in any consistent manner. The effective tax rate for schools appears to relate to changes in state support of municipalities, decreasing when state support decreased and increasing when state support increased.

The effective tax rate for other purposes which one might expect to be related to state support to municipalities does not reveal a consistent pattern. In some instances, the rate decreases when the state support increases, while in other cases the rate increases when state support increases. The only consistency of the pattern is a decrease in each instance when state support declined. The opposite might well have been expected.

The percent of per-pupil current revenue for schools from state sources decreased in each of the years examined whether state support to municipalities increased or decreased. The increasing percent of the property tax for schools has been a continuing pattern, broken only in the depression years from 1932 to 1933. With the exception of these years, education has received the same or a larger percent of the total tax revenue in each succeeding year of the period studied. These facts are shown in Table 4.12.

Changes in state aids and shared taxes to municipalities, with few exceptions, do not influence in any direct and consistent manner the fiscal factors analyzed. If a relationship is intended or if one is to be achieved it seems apparent that direct provisions must be made by legistures in allocating state aid and shared taxes to localities.

TABLE 4.12

SUMMARY TABLE: IMPACT OF CHANGES IN STATE SUPPORT OF LOCAL GOVERNMENT

Year	Change in Local State Aid & Shared Taxes/Capita	Change in Current Expen. Per Pupil	Change in Property Tax Per Capita		Effective Tax Rate		Percent of Current Expenditure from State Sources	Percent of Total Property Tax for Schools	Percent of Total Tax Revenue for Schools
			Schools	Total	Schools	Other			
1931-1932	$7.51	$11.61	$1.02	$-6.40	Increased	Decreased	Decreased	Increased	Increased
1932-1933	-9.32	-38.60	-7.87	-16.65	Decreased	Decreased	Decreased	Decreased	Decreased
1935-1936	4.24	44.74	2.03	4.05	Increased	Increased	Decreased	Increased	Same
1942-1943	3.90	2.83	-.19	-7.83	Increased	Decreased	Decreased	Increased	Increased
1944-1945	-3.55	11.42	.95	-1.10	Increased	Decreased	Decreased	Increased	Increased

Notes to Chapter IV

1. Effective tax rates were calculated as follows: Equalized valuation of property in constant dollars divided by property tax collection in constant dollars.

2. Other purposes include: state, county, city, village and town taxes on general property.

3. ________, Annual Report of the Council of Economic Advisers (Washington D. C.: United States Government Printing Office, January, 1963).

4. U. S. Department of Commerce, Office of Business Economics, Supplement to Survey of Current Business (Washington D. C.: United States Government Printing Office, 1947).

CHAPTER V

ANALYSIS OF VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION AND NEED FOR EDUCATIONAL SERVICES

Several types of statistical treatment were employed in analyzing data gathered for 104 Wisconsin school districts with respect to each of the 161 variables described in Chapter II. Coefficients of intercorrelation were computed and both factor analysis and discriminant analysis were employed. All computations were performed on the CDC 1604 Computer operated by the University of Wisconsin's Numerical Analysis Laboratory using standard machine language programs. The results of statistical analysis of the data will be presented and discussed in this chapter.

Intercorrelation and Multiple Correlation

As the first step in analyzing the variables relating to ability to finance education and need for educational services, product-moment coefficients of correlation were computed. Size limitations imposed by the computer program foreclosed the possibility of simultaneously computing intercorrelations of the initial 160 variables. Consequently, intercorrelations of the 76 variables arbitrarily categorized as reflecting ability to support education and the 84 variables arbitrarily categorized as reflecting demand for educational services were computed separately. Intercorrelations for the entire sample, as well as for medium cities, small cities, established suburbs, developing suburbs, and agricultural service centers were computed for each category. Since only one large city was included in the sample, intercorrelations for this group could not be computed.

In addition to providing preliminary information regarding relationships between the variables in each category, the intercorrelations were used as one basis for eliminating certain variables from further consideration. The matrix of intercorrelations for each category was analyzed and variables were identified which could be discarded on the basis of their high correlation with variables which were retained. Other bases for elimination of variables were the accuracy, accessibility, objectivity, ease of collection, and freedom from manipulation of data. Preference was given variables for which data were available from official reports; which could be collected on a school district basis with relative ease; and which permitted a minimum of misinterpretation or manipulation on the part of reporting officials.

Means and standard deviations for each variable for the entire sample, as well as for the various classes of school district, were obtained as a by-product of the correlation analysis. These are given in Appendix B.

Intercorrelations Between Ability Variables

The matrix of intercorrelations between the 76 variables related to ability to support education is shown in Table 5.1 A total of 11 pairs of variables having $r \geq \pm .90$ were noted; 13 pairs of variables having

TABLE 5.1

INTERCORRELATIONS BETWEEN 76 VARIABLES RELATED TO ABILITY TO SU

VAR.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.000																			
2	.021	1.000																		
3	.012	.470	1.000																	
4	.083	.531	.449	1.000																
5	.291	.104	.073	.194	1.000															
6	.059	.181	.528	.066	-.124	1.000														
7	-.193	-.088	-.087	-.308	-.250	-.267	1.000													
8	1.000	.021	.012	.078	.287	.058	-.186	1.000												
9	1.000	.022	.014	.083	.289	.061	-.193	1.000	1.000											
10	.085	-.011	-.164	-.316	.372	-.067	.073	.090	.087	1.000										
11	.247	.035	-.006	.082	.362	.117	-.395	.246	.246	.226	1.000									
12	-.282	.015	.187	.262	-.379	.067	.142	-.284	-.281	-.317	-.333	1.000								
13	.107	.242	.269	.846	.039	.095	-.328	.101	.107	-.390	.093	.217	1.000							
14	.241	.234	.232	.809	.218	.043	-.371	.234	.240	-.328	.156	.003	.872	1.000						
15	.321	.225	.241	.784	.241	.057	-.380	.313	.319	-.346	.169	.012	.856	.961	1.000					
16	.081	.227	.280	.780	.163	.052	-.322	.077	.083	-.199	.166	.151	.901	.798	.763	1.000				
17	.133	.282	.439	.190	-.015	.829	-.331	.130	.135	-.107	.146	.037	.196	.201	.207	.118	1.000			
18	.150	.018	-.190	-.083	.452	-.149	-.198	.146	.149	.327	.234	-.376	-.146	.119	.067	-.052	-.066	1.000		
19	.139	.011	-.189	-.113	.453	-.160	-.184	.136	.137	.324	.232	-.362	-.178	.070	.041	-.082	-.080	.990	1.000	
20	-.023	.102	.132	.623	.293	-.228	-.263	-.027	-.026	-.072	.222	.146	.703	.593	.572	.769	-.213	.035	.029	1.000
21	-.196	-.130	-.170	-.438	-.245	-.319	.833	-.189	-.195	.185	.366	.125	-.449	-.508	-.500	-.354	-.417	-.102	-.067	-.265
22	.034	.078	.159	.162	-.263	.307	-.242	.032	.036	.317	-.028	.181	.107	.135	.138	-.165	.397	-.187	-.213	-.307
23	.165	.192	.242	.224	-.072	.488	-.445	.163	.168	-.208	.139	-.118	.181	.266	.269	.058	.531	-.073	-.107	-.302
24	-.110	.257	-.338	-.707	.009	-.226	.388	-.105	-.112	.389	-.106	-.226	-.730	-.695	-.684	-.592	-.307	.178	.221	-.385
25	.048	-.205	-.250	-.467	.143	-.044	-.021	.047	.049	.172	-.006	-.094	-.450	-.379	-.385	-.352	-.102	.235	.239	-.257
26	.204	-.010	-.057	.041	.275	-.084	-.132	.203	.204	-.071	.001	-.067	.100	.117	.145	.148	.070	.075	.067	.014
27	.055	.085	.073	.592	.191	-.020	-.207	.050	.051	-.190	.115	.050	.646	.679	.637	.534	.017	.096	.059	.590
28	.167	.385	.048	-.017	.185	.049	-.163	.167	.164	.403	.197	-.266	-.181	-.084	-.091	-.124	.113	.327	.328	-.146
29	-.135	-.107	-.071	-.181	-.007	-.132	-.268	-.136	-.137	.229	-.117	.034	-.160	-.223	-.233	-.165	-.034	.088	.102	.005
30	.221	.227	.137	.559	.144	.111	.407	.213	.217	-.211	.239	-.025	.538	.684	.670	.384	.242	.176	.134	.285
31	.132	-.225	-.171	-.179	.150	-.404	-.034	.137	.135	.092	.069	-.031	-.168	-.142	-.148	-.094	-.421	.103	.109	.164
32	.042	-.112	.077	-.041	.198	-.180	-.058	.047	.044	.062	.092	.053	-.034	-.144	-.138	.047	-.184	.000	.019	.270
33	.258	-.177	-.144	-.425	.214	-.036	-.077	.261	.259	.381	.236	-.396	.453	.263	-.257	-.341	-.092	.285	.289	-.296
34	-.064	-.069	.071	.159	-.125	-.390	.036	-.064	.063	-.243	-.149	.240	.197	.173	.149	.117	-.341	-.095	-.110	.265
35	.150	.244	.535	.732	.171	.314	-.105	.149	.153	-.252	.114	.235	.637	.628	.600	.601	.321	-.141	-.171	.434
36	.358	.005	.175	.005	.357	.243	-.213	.357	.359	.258	.318	-.309	-.094	.091	.086	-.094	.222	.283	.272	-.165
37	.125	.302	.428	.682	.111	.428	-.378	.121	.128	-.201	.176	.113	.788	.704	.677	.864	.531	-.076	-.109	.523
38	.012	-.037	-.033	-.096	.094	.099	-.028	.008	.009	-.036	.041	-.070	-.040	.073	.071	-.090	.243	.202	.198	-.103
39	.057	.124	.113	.431	-.070	.009	-.154	.056	.056	-.244	-.033	.156	.361	.334	.322	.164	.023	-.104	-.121	.320
40	.161	.039	.073	.212	-.085	-.207	-.230	.159	.161	-.266	-.144	.130	.169	.218	.184	.053	.014	-.044	-.066	.157
41	.515	.072	.052	.313	.171	-.040	-.263	.518	.521	-.147	.191	-.299	.406	.525	.513	.381	.101	.166	.140	.333
42	-.100	-.199	-.199	-.446	.035	-.084	.262	-.099	-.099	.305	-.097	.059	-.469	-.446	-.490	-.339	-.189	.126	.120	-.175
43	-.087	-.113	.131	-.191	-.141	-.154	.316	.084	.086	-.032	-.184	-.099	-.183	-.168	-.184	-.188	-.205	-.123	-.130	-.169
44	.259	.013	.148	-.014	.435	.128	-.169	.255	.255	.338	.412	-.238	-.113	.052	.066	-.034	.125	.392	.403	.016
45	-.114	-.052	.129	-.258	-.009	.070	.196	-.110	-.114	.224	.179	-.141	-.306	-.311	-.298	-.202	-.022	.034	.061	-.167
46	.307	.022	.260	.244	.499	.018	-.234	.307	.307	.077	.159	-.086	.143	.210	.234	.167	.101	.121	.111	.211
47	.178	-.083	.021	-.087	.395	-.086	-.221	.178	.178	.144	.135	-.204	-.111	-.048	-.017	-.072	-.024	.187	.188	.026
48	.509	.048	.058	.301	.190	.237	-.272	.503	.512	-.086	.160	-.093	.316	.392	.403	.261	.328	.052	.026	.050
49	.048	.025	.053	.189	-.096	.009	-.021	.046	.049	-.069	-.103	.063	.167	.177	.146	.186	.039	-.034	-.051	.154
50	.279	.061	.106	.217	.188	.219	-.293	.275	.280	.024	.230	-.291	.289	.439	.439	.324	.280	.181	.162	.168
51	.165	.114	.126	.407	.095	.102	-.171	.163	.168	.037	.108	.020	.378	.411	.384	.360	.141	.075	.043	.227
52	-.039	-.088	-.103	-.165	.020	-.173	.113	-.039	-.041	.149	.039	-.061	-.139	-.137	-.138	-.122	-.178	.056	.061	-.001
53	.094	.057	.054	.042	-.142	.067	.122	.095	.093	.033	.004	-.046	.086	.066	.072	.009	.062	-.130	-.135	.054
54	.012	.136	.003	.069	-.043	-.106	.139	.013	.013	-.010	-.143	.099	.031	.010	-.023	.023	-.103	.123	.135	.008
55	.003	.012	-.001	-.057	.054	.072	-.115	-.003	-.004	.171	.073	-.061	-.061	-.003	-.033	.008	.033	.151	.132	-.021
56	-.065	-.052	.035	-.211	-.035	.057	.076	-.061	-.064	.135	.122	-.079	-.229	-.224	-.235	-.143	-.022	.096	.104	-.162
57	.289	-.028	-.143	-.001	.220	.082	-.232	.285	.289	.160	.306	-.207	.062	.139	.146	.088	.144	.187	.167	-.001
58	.499	.016	.020	.203	.083	.270	-.341	.493	.502	-.075	.218	-.167	.326	.400	.413	.294	.350	.103	.076	.042
59	.169	.086	-.076	.057	.173	.096	-.216	.165	.168	.030	.176	-.114	.007	.118	.131	-.025	.196	.285	.278	-.057
60	-.020	-.019	-.059	-.066	-.043	-.002	-.036	-.019	-.020	.010	.003	.033	-.060	-.050	-.071	-.031	-.029	.087	.078	-.053
61	.147	-.033	-.045	.037	.176	.168	-.188	.141	.147	.073	.099	-.172	.042	.132	.130	-.010	.248	.249	.242	-.043
62	-.054	-.040	-.029	-.128	.061	.080	.016	-.053	-.054	.097	-.103	-.068	-.136	-.186	-.193	-.085	.011	.167	.184	-.081
63	-.162	-.242	.341	-.448	-.238	-.351	.244	-.159	-.163	-.127	-.260	.114	-.413	-.434	-.433	-.366	-.393	-.092	-.068	-.189
64	-.197	.098	.031	-.154	-.038	-.017	.008	-.190	-.196	.321	.056	-.047	-.215	-.340	-.323	-.178	-.126	-.116	-.090	.013
65	.139	.261	.361	.712	.016	.274	-.159	.135	.141	-.317	.078	.200	.747	.720	.702	.655	.366	-.162	-.192	.413
66	-.161	-.093	-.079	-.279	-.166	-.259	.428	-.156	-.162	.026	-.191	.152	-.302	-.391	-.360	-.277	-.345	-.112	-.067	-.106
67	.066	.138	.210	.486	-.017	-.065	-.045	-.067	-.063	-.200	-.065	.172	.472	.387	.350	.494	.009	-.093	-.106	.372
68	-.040	.042	.290	-.021	-.112	.489	.046	-.038	-.093	-.114	.034	.238	.051	-.039	-.021	.004	.292	-.135	-.125	-.041
69	.001	.247	.327	.584	-.122	.206	-.051	.001	.003	-.321	-.006	.309	.624	.514	.503	.546	.229	-.302	-.312	.412
70	-.185	.214	.280	-.388	-.206	-.326	.269	-.180	-.184	-.072	-.226	.137	-.391	-.421	-.424	-.331	-.389	-.131	-.112	-.167
71	.023	.236	.403	.719	-.029	.215	-.045	.021	.025	-.292	.004	.358	.688	.638	.604	.635	.261	-.245	-.276	.460
72	-.167	-.106	-.086	-.270	-.143	-.250	.379	-.162	-.167	.045	-.147	.154	-.310	-.392	-.368	-.261	-.338	-.121	-.080	-.089
73	-.192	.041	.019	-.164	.002	.023	.012	-.185	-.191	.344	.134	-.033	-.239	-.363	-.348	-.181	-.138	-.134	-.109	.049
74	-.082	.126	.175	.502	-.006	-.092	-.041	.083	-.080	-.188	-.048	.241	.467	.371	.328	.486	-.014	-.115	-.132	.407
75	-.054	.041	.310	-.025	-.120	.511	.056	-.052	-.054	-.105	.013	.268	.030	-.064	-.047	-.019	.295	-.155	-.146	-.053
76	-.153	.127	.265	.387	-.138	.068	.113	-.150	-.151	-.169	-.056	.404	.332	.212	.188	.333	.010	-.350	-.356	.34

PPORT EDUCATION IN 104 WISCONSIN SCHOOL DISTRICTS

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
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																		18
																		19
																		20
1.000																		21
-.422	1.000																	22
-.645	.457	1.000																23
.540	-.431	-.542	1.000															24
.134	-.223	-.243	.364	1.000														25
-.132	-.129	.020	-.126	.039	1.000													26
-.371	.100	.025	-.432	-.269	-.129	1.000												27
-.127	-.045	.198	.131	-.003	-.002	-.094	1.000											28
.304	-.120	-.272	.192	.018	-.162	-.029	.014	1.000										29
-.537	.354	.334	-.535	-.245	.081	.512	.163	-.188	1.000									30
.146	-.259	-.358	.204	.313	.055	-.196	-.217	.023	-.204	1.000								31
.125	-.293	-.435	.159	.324	.190	-.124	-.302	.028	-.326	.669	1.000							32
.014	-.103	.068	.301	.196	.024	-.353	.199	-.046	-.083	.330	-.089	1.000						33
.048	.006	-.180	-.126	-.002	-.098	.173	-.194	.061	.095	.536	.144	-.352	1.000					34
-.262	.118	.196	-.572	-.348	.042	.367	-.219	-.183	.364	.064	.145	-.177	.103	1.000				35
-.253	.075	.343	-.071	-.012	.097	-.067	.228	-.068	.247	.067	-.205	.735	-.381	.290	1.000			36
-.429	-.018	.261	-.571	-.317	.123	.394	-.042	-.145	.367	-.251	-.025	-.319	-.059	.618	-.026	1.000		37
-.174	.245	.054	.013	.176	-.057	.023	-.020	-.004	.173	-.006	-.070	.039	.006	-.051	.062	-.005	1.000	38
-.274	.252	.151	-.440	-.288	-.101	.381	-.072	.164	.326	-.035	.028	-.166	.083	.385	.072	.116	-.079	39
-.276	.298	.077	-.316	.045	.029	.211	-.100	.083	.147	.177	.157	-.060	.172	.201	.006	-.007	.154	40
-.324	.030	.079	-.281	-.053	.116	.254	-.019	-.094	.335	.132	.122	.013	.084	.303	.076	.343	.059	41
.407	-.240	-.445	.459	.419	-.029	-.243	.066	.185	-.378	.214	.239	.152	-.032	-.279	-.074	-.329	.109	42
.202	-.080	-.121	.260	.090	-.040	-.058	-.042	.037	-.129	-.060	-.137	.108	.078	-.191	-.005	-.219	-.059	43
-.172	-.092	.112	.060	.061	-.066	.051	.418	.139	.175	-.054	-.119	.253	-.180	.037	.428	.040	.183	44
.241	-.092	-.064	.254	-.043	-.288	-.175	.073	.061	-.230	-.164	-.144	.166	-.254	-.221	.081	-.144	-.027	45
-.199	.015	-.041	-.120	.149	.048	.216	-.053	.045	.114	.376	.364	.080	.172	.228	.158	.144	.195	46
-.098	-.038	-.137	.137	.346	.027	.053	.022	.088	-.058	.341	.307	.122	.148	-.195	.009	-.097	.225	47
-.282	.121	.251	-.315	-.048	.130	.161	.011	-.100	.315	-.044	-.005	.030	-.088	.338	.306	.351	.173	48
.100	.101	-.196	-.193	-.175	-.096	.143	-.130	.019	.098	-.075	-.076	-.081	.021	.141	-.036	.164	.055	49
-.208	.052	.046	-.273	-.078	.076	.188	.012	-.158	.335	-.056	.067	.168	-.166	.278	.303	.392	.208	50
-.088	.088	-.001	-.355	-.236	-.031	.279	.060	-.072	.317	-.125	-.079	-.046	.064	.363	.193	.338	-.051	51
.184	-.172	-.209	.194	.103	-.104	.111	.012	.046	.002	.034	-.040	.126	-.021	-.208	.007	-.178	.035	52
.083	.140	-.057	-.155	-.180	.086	.057	-.063	.280	.030	-.164	-.038	.005	-.207	.056	.031	.050	.046	53
.182	-.020	-.104	.046	-.175	-.107	.055	.132	.094	-.159	-.016	-.103	-.073	.100	-.010	-.018	-.028	-.057	54
-.112	-.124	.086	.033	.057	.203	-.056	.145	-.236	.005	.038	-.015	.197	-.098	.032	.203	.033	-.007	55
.108	-.121	-.008	.202	.033	.015	-.240	.078	-.104	-.222	-.011	-.010	.168	-.145	-.090	.140	-.101	-.048	56
-.252	.000	.111	.047	.064	.111	.108	.122	.007	.125	-.121	-.112	.183	-.228	-.003	.269	.156	.026	57
-.369	.106	.321	-.283	.007	.183	.106	.060	-.175	.302	-.020	-.010	.025	-.041	.230	.220	.406	.239	58
-.300	.066	.203	-.041	.047	.229	-.057	.157	-.167	.217	.034	-.048	.149	-.035	.112	.337	.053	.377	59
-.036	-.096	.021	.057	.077	.225	-.154	.047	-.196	-.097	.124	.125	.057	.028	.035	.060	-.029	-.008	60
-.292	.132	.231	-.091	.024	.045	.036	.041	-.027	.173	-.109	-.119	.063	-.108	.099	.323	.093	.298	61
.056	-.179	-.019	.144	.161	.033	-.112	-.032	.091	-.226	.007	.152	-.056	-.101	-.128	-.019	-.056	.006	62
.409	-.147	-.375	.348	.428	-.066	-.189	-.217	.148	-.431	.462	.364	.027	.351	-.396	-.429	-.460	.024	63
.056	-.067	-.008	.093	-.054	-.257	-.228	.091	.214	-.259	.069	.033	.161	-.084	-.198	-.028	-.193	-.073	64
-.329	.219	.276	-.631	-.429	-.012	.470	-.097	-.227	.536	-.162	-.159	-.349	.221	.738	.053	.703	-.002	65
.530	-.257	-.496	.513	.077	-.072	-.215	-.113	.184	-.385	.248	.179	.104	.081	-.188	-.150	-.356	-.096	66
-.125	.040	.021	-.320	-.332	-.057	.183	-.098	-.122	.214	-.074	-.123	-.114	.094	.373	.005	.359	.065	67
.038	.096	-.009	-.032	.031	-.036	-.006	-.180	-.004	-.033	.028	.063	-.090	.059	.219	-.032	.127	.022	68
-.157	.168	.133	-.545	-.345	-.154	.376	-.204	-.113	.326	.052	-.003	-.364	.395	.650	-.124	.562	-.022	69
.408	-.143	-.364	.343	.362	-.101	-.175	-.216	.177	-.425	.470	.368	-.034	.360	-.317	-.397	-.435	.008	70
-.227	.183	.168	-.583	-.402	-.141	.494	-.170	-.132	.422	-.044	-.081	-.433	.396	.771	-.084	.630	.031	71
.497	-.248	-.492	.508	.101	-.087	-.198	-.121	.194	-.390	.294	.236	.099	.099	-.171	-.162	-.348	-.091	72
.065	-.076	-.068	.115	-.012	-.270	-.195	.057	.223	-.271	.153	.130	.137	-.027	-.158	-.002	-.207	-.070	73
-.126	.057	-.029	-.325	-.309	-.039	.199	-.170	-.071	.206	-.003	-.055	-.138	.157	.400	-.029	.323	.085	74
.049	.104	-.013	-.021	.041	-.067	-.011	-.183	.008	-.050	.036	.073	-.096	.063	.229	-.032	.108	.021	75
.040	.066	-.072	-.294	-.191	-.285	.273	-.253	.059	.053	.252	.164	-.350	.515	.495	-.267	.004	.219	76

TABLE 5.

VAR.	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
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35																		
36																		
37																		
38																		
39	1.000																	
40	.505	1.000																
41	.222	.315	1.000															
42	-.205	.077	-.175	1.000														
43	-.025	-.084	-.028	.032	1.000													
44	.004	-.086	.046	.068	-.080	1.000												
45	-.195	-.332	-.183	.056	.107	.201	1.000											
46	.064	.148	.175	-.019	-.121	.196	-.023	1.000										
47	-.121	.063	.041	.117	-.041	.140	.053	.868	1.000									
48	.159	.125	.283	-.085	-.181	.244	-.233	.230	.045	1.000								
49	.039	.174	.128	.092	.065	-.001	-.058	.024	-.034	.258	1.000							
50	.046	.145	.313	.005	-.154	.185	-.057	.149	.077	.550	.572	1.000						
51	.144	.081	.226	.020	-.077	.118	-.054	.132	-.019	.421	.656	.669	1.000					
52	-.091	-.164	-.196	.128	-.062	-.041	-.070	.015	.036	-.052	.088	.058	.039	1.000				
53	.498	.308	.192	.091	.097	.094	.025	-.026	-.043	.129	.263	.269	.194	-.156	1.000			
54	-.037	.023	.057	.062	.102	.052	.144	-.047	-.075	-.013	.134	-.012	.284	.038	-.107	1.000		
55	-.102	-.030	.088	.074	-.109	.086	.012	-.144	-.176	-.006	-.015	.091	-.015	.214	-.153	-.156	1.000	
56	-.148	-.176	-.142	.042	.022	.107	.576	-.125	-.053	-.136	-.031	.014	-.063	-.103	-.058	-.042	.680	1.000
57	-.031	-.020	.220	-.008	-.036	.227	-.062	-.029	-.028	.226	.075	.186	.043	-.051	.009	-.089	-.003	-.077
58	.038	.117	.352	-.165	-.180	.201	-.211	.162	.048	.854	.049	.451	.181	-.116	.035	-.025	.189	.034
59	.023	.124	.069	-.080	-.107	.231	-.110	-.013	-.045	.306	.022	.224	.009	-.034	-.118	-.139	.618	.460
60	-.045	.018	-.048	.035	-.068	-.046	-.024	-.130	-.103	-.006	-.014	.027	-.054	-.047	-.133	-.153	.853	.789
61	.055	.085	.130	-.087	-.085	.199	-.038	.038	.022	.274	-.018	.230	.050	-.021	.005	-.034	.020	-.024
62	-.105	-.015	-.013	.078	-.072	-.070	.064	.130	.216	-.037	-.038	-.040	-.067	-.022	-.117	.022	-.072	.025
63	-.105	.152	-.183	.379	.071	-.282	-.089	-.044	.148	-.264	-.092	-.262	-.336	.120	-.081	-.068	-.130	-.08
64	.123	-.080	-.211	-.066	.000	-.032	.264	-.035	.027	-.329	-.142	-.190	-.194	-.027	.137	-.080	.020	.19
65	.269	.132	.340	-.368	-.159	-.030	-.261	.078	-.234	.322	.193	.282	.353	-.133	.045	.096	-.034	-.18
66	-.190	-.097	-.211	.211	.315	-.091	.109	-.091	-.015	-.320	-.056	-.309	-.211	-.045	.025	.122	-.058	.09
67	.140	.015	.137	-.280	-.095	-.060	.033	.025	-.158	.075	.258	.099	.207	-.107	-.033	.044	-.033	.02
68	-.014	-.025	-.097	.132	-.056	-.087	-.111	-.024	-.060	-.020	-.049	.023	-.050	-.091	-.041	.006	-.029	-.08
69	.314	.182	.219	-.278	-.149	-.188	-.250	.052	-.214	.118	.130	.134	.184	-.133	.069	.061	-.096	-.17
70	-.111	.098	-.192	.316	.087	-.262	-.029	.013	.165	-.291	-.105	-.300	-.327	.025	-.096	-.053	-.142	-.05
71	.276	.146	.244	-.321	-.150	-.078	-.251	.166	-.168	.233	.198	.168	.279	-.180	-.001	.060	-.080	-.18
72	-.182	-.087	-.198	.214	.276	-.078	.126	-.045	.024	-.310	.066	-.320	-.216	-.086	-.017	.104	-.072	.09
73	.090	-.086	-.197	-.056	-.020	-.012	.279	.046	.097	-.318	-.142	-.201	-.196	-.061	.100	-.084	-.013	.18
74	.170	.081	.100	-.253	-.106	-.115	-.038	.099	-.102	.081	.250	.077	.192	-.108	-.041	-.025	-.048	-.02
75	-.007	-.032	-.124	.130	-.059	-.085	-.108	-.053	-.053	-.023	-.048	.004	-.054	-.092	-.045	-.007	-.035	-.08
76	.134	.134	.031	-.141	-.093	-.204	-.131	.168	-.042	-.067	.069	-.081	.009	-.187	-.012	.002	-.148	-.12

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	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	
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7	1.000																				57
4	.247	1.000																			58
0	.194	.428	1.000																		59
9	-.093	.198	.652	1.000																	60
4	.256	.298	.523	-.025	1.000																61
5	.007	-.053	.155	-.022	.548	1.000															62
3	-.269	-.277	-.243	-.014	-.231	.121	1.000														63
6	-.130	-.306	-.053	.049	-.083	.147	.051	1.000													64
2	.074	.337	.074	-.053	.116	-.225	-.461	-.332	1.000												65
9	-.272	-.326	-.120	.040	-.243	.048	.341	.193	-.318	1.000											66
8	-.200	.018	-.020	.010	-.095	-.062	-.222	.035	.362	-.112	1.000										67
2	-.020	-.035	-.067	-.011	-.124	-.035	.007	-.002	.120	-.012	-.061	1.000									68
8	-.104	.136	-.052	-.048	-.025	-.159	-.120	-.005	.860	-.101	.358	.260	1.000								69
3	-.300	-.303	-.254	-.018	-.228	.169	.956	.025	-.470	.372	-.159	-.003	-.117	1.000							70
9	-.082	.213	-.002	-.047	.022	-.160	-.259	-.212	.881	-.187	.434	.159	.867	-.187	1.000						71
0	-.278	-.315	-.139	.025	-.238	.086	.398	.200	-.368	.971	-.086	-.016	-.133	.493	-.173	1.000					72
3	-.172	-.300	-.082	.033	-.080	.192	.035	.958	-.366	.224	.030	.000	-.023	.156	-.169	.278	1.000				73
0	-.233	-.002	-.012	.010	-.097	-.018	-.162	.082	.307	-.066	.912	-.049	.341	-.071	.461	-.019	.113	1.000			74
1	-.050	-.049	-.079	-.011	-.124	-.018	.031	.022	.087	.011	-.062	.992	.241	.043	.166	.021	.041	-.032	1.000		75
3	-.299	-.087	-.163	-.036	-.142	.011	.240	.206	.416	.152	.329	.236	.724	.377	.746	.234	.326	.433	.281	1.000	76

$r \geqq \pm .80$ but $< \pm .90$ were found; and 23 pairs of variables having $r \geqq \pm .70$ but $< \pm .80$ were identified. Table 5.2 identifies all pairs of variables having $r \geqq \pm .70$ for the total group and also shows corresponding correlations between these variables in each of five classes of school district.

Variables 1 (population of school district), 8 (number of persons in civilian labor force), and 9 (number of families in school district) were found to be perfectly correlated with r = 1.000. These three variables were also found to be highly correlated in each of the five classes of district. Variable 8 was eliminated from further consideration.

Variables 18 (retail sales per capita) and 19 (retail sales per household) were found to have r = .990 for the total sample and r = .976 in each of the five classes of district. Variable 19 was eliminated.

Variables 14 (effective buying income per capita) and 15 (effective buying income per family) were found to have r = .961 for all districts; $r \geqq .903$ for established suburbs, developing suburbs, and agricultural service centers; r = .863 for small cities; and r = .738 for medium cities. No great advantage could be seen in retaining two measures of effective buying income. Since the investigators had preference for the effective buying income expressed on a per-capita basis, Variable 15 was eliminated.

Variable 30 (telephones per capita) was eliminated because data available for this variable were of questionable accuracy, and for some school districts no datum was available.

For Variables 46 (property tax delinquency) and 47 (percent of total property tax delinquent) r = .868 was found. These two variables were found to have r >.90 for medium cities, small cities, established suburbs and agricultural service centers, although in developing suburbs r = .5 Also, data available on property tax delinquency were of questionable validity, since the reported total included the balance due on taxes being paid on an installment basis. Consequently, Variable 46 was eliminated.

Variables 48 (municipal securities sold per capita) and 58 (municipal securities purchased per capita) were found to have r = .854 for the total sample. Considerable variation in the correlation between these two variables was found in the five classes of district. Variable 48 was eliminated, since it yielded essentially the same information as was provided by Variable 58. Preference was given the latter because securities purchased were recorded as actual amount paid rather than at face value.

Variable 60 (municipal repayment of short-term loans per capita) was also eliminated. Some data for this variable were of questionable accuracy and were not obtainable for all school districts. Moreover, r = .853 was found between Variables 60 and 55 (municipal disbursements for recreation per capita) and r = .789 was found between Variables 60 and 56 (municipal disbursements for public service enterprises per capita).

Intercorrelations Between Need Variables

The matrix of intercorrelations between the 84 variables related to need for educational service is shown in Table 5.3. Relatively few

TABLE 5.2

ABILITY VARIABLES HAVING INTERCORRELATION ≧ ± .70 FOR ALL DISTRICTS, WITH COMPARISON OF CORRESPONDING INTERCORRELATION FOR FIVE CLASSES OF SCHOOL DISTRICT

Inter-correlation of Variables	Classes of District					
	All Districts	Medium City	Small City	Established Suburb	Developing Suburb	Agricultural Service Cen.
1 and 8	1.000	.997	.982	.996	.987	.986
1 - 9	1.000	.994	.987	.997	.994	.984
8 - 9	1.000	.992	.991	.999	.997	.972
68 - 75	.992	.992	.993	.998	.973	.996
18 - 19	.990	.976	.980	.991	.991	.991
66 - 72	.971	.970	.957	.996	.973	.963
14 - 15	.961	.738	.863	.961	.966	.903
64 - 73	.958	.987	.926	.990	.998	.960
63 - 70	.956	.960	.973	-.261	.989	.928
67 - 74	.912	.986	.932	.982	.992	.783
13 - 16	.901	.832	.867	.983	.921	.702
65 - 71	.881	.724	.852	.778	.933	.869
13 - 14	.872	.751	.710	.937	.872	.459
46 - 47	.868	.941	.936	.976	.507	.950
69 - 71	.867	.770	.819	.705	.801	.842
16 - 37	.864	.378	.808	.977	.924	.615
65 - 69	.860	.811	.907	.988	.771	.852
13 - 15	.856	.424	.687	.958	.814	.532
48 - 58	.854	.945	.764	.966	.554	.698
55 - 60	.853	.034	.987	.000	.188	-.160
4 - 13	.846	.727	.695	.985	.804	.461
7 - 21	.833	.721	.853	.419	.616	.741
6 - 17	.829	.766	.846	.894	.972	.878
4 - 14	.809	.533	.654	.906	.752	.543
14 - 16	.798	.457	.765	.949	.838	.408
56 - 60	.789	-.281	.935	.000	.167	.001
13 - 37	.788	.404	.804	.963	.821	.641
4 - 15	.784	.376	.644	.955	.692	.592
4 - 16	.780	.775	.684	.950	.787	.621
35 - 71	.771	.607	.664	.545	.813	.707
16 - 20	.769	.058	.300	.960	.761	.133
15 - 16	.763	.128	.726	.919	.839	.436
13 - 65	.747	.494	.746	.404	.827	.411
71 - 76	.746	.748	.860	.994	.781	.719
35 - 65	.738	.636	.540	.766	.750	.597

TABLE 5.2 (Continued)

Inter-correlation of Variables	Classes of District					
	All Districts	Medium City	Small City	Established Suburb	Developing Suburb	Agricultural Service Cen.
33 - 36	.735	.753	.603	.787	.752	.792
4 - 35	.732	.780	.468	.160	.915	.202
69 - 76	.724	.539	.706	.762	.887	.678
14 - 65	.720	.387	.495	.548	.821	.240
4 - 71	.719	.585	.517	.733	.781	.222
4 - 65	.712	.552	.493	.372	.749	.092
14 - 37	.704	.231	.612	.922	.802	.075
37 - 65	.703	.492	.785	.617	.878	.324
13 - 20	.703	.152	.031	.986	.860	-.071
15 - 65	.702	.214	.541	.371	.812	.295
4 - 24	-.707	-.558	-.556	-.965	-.494	-.188
13 - 24	-.730	-.530	-.549	-.984	-.615	-.307

variables, other than those related to size of student body, were found to be correlated closely. Twenty-two pairs of variables were found with $r \geq \pm .90$; eight pairs were found with $r \geq \pm .80$ but $< \pm .90$; and six pairs with $r \geq \pm .70$ but $< \pm .80$. All pairs of variables having $r \geq \pm .70$ for the total sample are identified in Table 5.4, which also shows corresponding correlations for each pair of variables in five classes of district.

All variables expressing pupil enrollment were found to be highly correlated. Variable 77 (K-12 enrollment at end of school year) correlated perfectly with Variables 80 (total resident A. D. M.) and 83 (total enrollment, K-6) and had $r = .998$ with Variables 78 (total population, age 5-18) and 84 (total enrollment, 7-12). In fact, all variables expressing school system enrollment (77, 78, 79, 80, 83, and 84) were found to have $r \geq .998$ for the total sample. Little variation was found in the intercorrelations between these variables in the five classes of school district for which intercorrelations were computed. The only exception was in the case of small cities, where for a number of variable pairs $r > .80$ was noted. In view of the high correlations between variables measuring pupil enrollment, Variables 77, 79, 83, and 84 were discarded.

Variables 81 (total non-resident A. D. A.) and 82 (total non-resident A. D. M.) were perfectly correlated for the total sample and exhibited $r \geq .999$ in each of the five classes of district. Variable 81 was eliminated.

Variables 94 (pupils per teacher, K-8) and 97 (average class size, K-8) were found to have $r = .853$ for all districts. Correlations $\geq .80$ were also found between these two variables for all other classes of district with the exception of small cities. Variable 94 was retained, since the data could be taken directly from official reports.

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TABLE 5.3

INTERCORRELATIONS BETWEEN 84 VARIABLES RELATED TO NEED FOR EDUCATIONAL SERVICES IN 104 WISCONSIN SCHOOL DISTRICTS

VAR.	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	
77	1.000																																											77
78	.998	1.000																																										78
79	1.000	.998	1.000																																									79
80	1.000	.998	1.000	1.000																																								80
81	.278	.260	.263	.261	1.000																																							81
82	.280	.262	.265	.264	1.000	1.000																																						82
83	1.000	.998	1.000	1.000	.258	.261	1.000																																					83
84	.998	.997	.998	.998	.314	.316	.996	1.000																																				84
85	.018	.001	.017	.016	.056	.055	.017	.024	1.000																																			85
86	-.097	-.085	-.096	-.096	-.065	-.070	-.097	-.100	-.484	1.000																																		86
87	-.095	-.111	-.095	-.095	-.052	-.051	-.095	-.092	.880	-.675	1.000																																	87
88	.150	.138	.152	.150	.078	.078	.147	.159	.573	-.409	.565	1.000																																88
89	-.102	-.102	-.105	-.104	.039	.039	-.101	-.105	-.217	.156	-.250	-.373	1.000																															89
90	-.036	-.039	-.037	-.037	.063	.064	-.038	-.034	.007	-.062	-.002	-.123	.025	1.000																														90
91	-.012	-.007	-.011	-.010	-.138	-.138	-.008	-.022	-.159	.313	-.264	-.224	-.046	-.010	1.000																													91
92	.190	.184	.191	.191	.069	.074	.193	.183	-.249	.106	-.310	-.145	.007	.013	.250	1.000																												92
93	-.008	.017	-.012	-.011	.048	.043	-.011	-.003	-.128	.073	-.135	-.153	.020	.061	.178	-.068	1.000																											93
94	.117	.114	.116	.117	.057	.061	.121	.109	-.257	.099	-.230	-.339	.113	.044	.056	.230	-.157	1.000																										94
95	.097	.097	.093	.091	.448	.445	.082	.124	-.190	.118	-.202	.012	.014	.037	-.166	.009	.057	.203	1.000																									95
96	.182	.179	.179	.179	.287	.289	.178	.190	-.254	.097	-.233	-.200	.028	.027	-.082	.147	-.057	.813	.685	1.000																								96
97	.100	.099	.099	.099	.093	.095	.101	.095	-.334	.147	-.304	-.294	.092	.036	.074	.234	-.104	.853	.335	.786	1.000																							97
98	.105	.105	.102	.100	.408	.406	.092	.128	-.247	.147	-.252	-.024	.012	.057	-.142	.087	.037	.211	.962	.664	.377	1.000																						98
99	-.048	-.053	-.046	-.045	-.105	-.103	-.043	-.057	-.019	.031	-.043	-.142	.316	-.037	.032	.020	-.085	.325	-.080	.144	.092	-.120	1.000																					99
100	.002	-.001	-.001	-.002	.287	.283	-.006	.018	.104	.038	.053	.012	.079	-.141	.015	-.142	.006	.250	.384	.386	.210	.256	.244	1.000																				100
101	.170	.163	.172	.172	.046	.052	.172	.168	.017	-.206	.110	.049	-.165	.099	-.138	.103	-.196	.506	.352	.648	.464	.356	.078	.236	1.000																			101
102	-.028	-.041	-.025	-.025	-.052	-.051	-.025	-.032	.206	-.088	.196	-.013	.043	-.084	-.039	-.125	-.112	.086	-.084	-.005	-.197	-.192	.672	.343	-.006	1.000																		102
103	-.216	-.221	-.211	-.209	-.351	-.347	-.204	-.238	-.257	.096	-.180	-.284	.094	-.036	.143	.343	-.248	.291	-.116	.129	.251	-.048	.160	-.127	.198	.062	1.000																	103
104	-.190	-.191	-.193	-.193	.104	.098	-.191	-.188	-.201	.170	-.231	-.266	.084	.203	.065	-.176	.015	-.066	.055	-.047	-.027	.034	.054	.007	-.189	.015	-.276	1.000																104
105	.214	.220	.211	.209	.283	.283	.200	.241	.307	-.118	.271	.400	-.092	-.131	-.108	-.160	.192	-.199	.189	-.014	-.182	.139	-.170	.154	-.059	-.028	-.605	-.467	1.000															105
106	.355	.357	.357	.357	-.044	-.041	.360	.346	.291	-.251	.265	.278	-.129	-.098	-.117	-.012	.056	-.049	-.222	-.115	-.069	-.220	-.095	-.040	.095	-.080	-.218	-.563	.253	1.000														106
107	.152	.150	.151	.150	.131	.132	.148	.159	.209	-.132	.168	.143	.041	-.048	-.190	-.184	.048	-.258	-.052	-.172	-.197	-.066	-.119	-.025	-.052	-.192	-.421	.022	.229	.314	1.000													107
108	-.172	-.166	-.168	-.167	-.305	-.306	-.168	-.182	-.205	.095	-.179	-.256	.142	.088	.013	-.021	.079	.039	-.130	-.060	.087	-.100	.114	-.133	.062	-.068	.276	.037	-.309	-.038	.064	1.000												108
109	.044	.048	.045	.046	-.057	-.058	.042	.048	-.037	.056	-.014	.075	-.088	.009	.130	.111	.146	-.146	.036	-.122	-.042	.129	-.102	-.195	-.137	-.182	.056	-.135	.070	.013	-.053	.079	1.000											109
110	.245	.260	.244	.242	.234	.231	.230	.272	.152	-.051	.127	.276	-.197	-.117	-.118	-.028	.244	-.187	.304	.033	-.127	.321	-.151	.114	-.054	-.036	-.416	-.272	.580	.218	.080	-.282	.426	1.000										110
111	-.149	-.145	-.150	-.149	-.069	-.070	-.150	-.149	-.113	.081	-.150	-.110	.078	.087	.120	.062	-.016	-.062	.118	-.054	-.038	.162	.042	-.116	-.176	-.045	.193	.026	-.083	-.275	-.246	.070	.623	.179	1.000									111
112	.159	.171	.159	.158	.124	.121	.148	.178	.227	-.079	.218	.321	-.228	-.079	-.154	-.050	.206	-.091	.277	.114	-.060	.259	-.044	.174	.089	.064	-.360	-.294	.547	.212	.066	-.267	.341	.857	.138	1.000								112
113	.265	.272	.263	.262	.194	.193	.255	.284	.391	-.228	.360	.406	-.200	-.202	-.215	-.282	.157	-.286	-.023	-.192	-.271	-.057	-.192	.010	-.028	-.113	-.623	-.180	.641	.340	.455	-.199	.024	.537	-.112	.472	1.000							113
114	.294	.297	.293	.291	.186	.185	.285	.311	.463	-.264	.439	.476	-.247	-.221	-.257	-.262	.148	-.271	-.029	-.160	-.258	-.063	-.211	.038	.030	-.093	-.641	-.203	.667	.369	.484	-.201	.085	.503	-.187	.483	.949	1.000						114
115	.332	.333	.333	.330	.330	.333	.317	.361	.055	-.007	.023	.184	-.189	-.005	-.083	.116	-.059	-.106	.232	.066	-.066	.216	-.157	.199	.078	-.051	-.369	-.030	.391	.033	.286	-.164	.003	.412	-.119	.373	.330	.360	1.000					115
116	.350	.350	.351	.348	.331	.335	.334	.378	.060	-.010	.025	.186	-.191	-.008	-.082	.123	-.063	-.105	.227	.065	-.065	.212	-.154	.196	.078	-.047	-.369	-.029	.385	.040	.298	-.163	.003	.404	-.119	.364	.330	.361	.999	1.000				116
117	.326	.333	.326	.324	.234	.234	.313	.350	.420	-.198	.400	.468	-.248	-.163	-.304	-.156	.127	-.226	.107	-.058	-.202	.074	-.147	.129	.077	-.021	-.557	-.310	.684	.362	.363	-.179	.099	.685	-.233	.690	.808	.855	.467	.464	1.000			117
118	.313	.316	.314	.312	.192	.191	.303	.335	.477	-.226	.451	.513	.295	-.182	-.287	-.205	.115	-.256	.052	-.109	-.248	.015	-.110	.139	.048	.030	-.567	-.306	.677	.384	.367	-.165	.079	.660	-.243	.673	.813	.873	.445	.444	.978	1.000		118
119	.076	.070	.073	.071	.326	.328	.068	.089	-.025	-.008	-.042	.107	-.099	-.026	.003	-.048	-.044	.197	.559	.457	.280	.554	-.028	.157	.305	-.024	-.137	-.011	.170	-.020	.016	-.066	.077	.140	.110	.152	.002	.028	.104	.103	.020	.009	1.000	119
120	.163	.150	.159	.157	.440	.441	.151	.186	.054	-.057	.062	.048	-.189	.038	-.148	.004	.076	.213	.530	.490	.192	.468	.033	.286	.327	.079	-.302	.039	.265	.026	.092	-.114	-.115	.186	-.080	.212	.138	.170	.320	.319	.209	.191	.619	120
121	.067	.060	.063	.063	.330	.331	.059	.082	-.002	.071	-.019	-.013	-.061	-.018	-.033	.080	-.085	.331	.522	.497	.338	.471	.147	.378	.187	.152	-.014	-.027	.108	-.121	-.[illegible]73	-.037	.057	.176	.123	.213	-.063	-.058	.132	.135	.039	.015	.511	121
122	.198	.195	.194	.192	.417	.417	.186	.219	.060	.036	-.006	.195	-.236	-.061	-.139	.042	-.042	.264	.588	.524	.266	.556	-.048	.297	.381	-.038	-.281	-.065	.360	-.014	.082	-.161	-.051	.297	.003	.288	.301	.284	.373	.376	.306	.294	.523	122
123	.214	.212	.213	.211	.264	.265	.205	.231	.198	-.133	.153	.236	-.101	-.150	-.139	.047	.009	.084	.273	.207	.053	.232	-.022	.217	.140	.072	-.261	-.127	.394	.043	.165	-.147	-.175	.237	-.060	.236	.460	.461	.364	.366	.408	.386	.198	123
124	.218	.213	.217	.215	.280	.282	.211	.234	.274	-.185	.270	.294	-.135	-.282	-.165	-.214	-.105	-.028	.033	.039	-.046	-.030	.078	.318	.071	.203	-.341	-.159	.396	.241	.361	-.210	-.197	.199	-.304	.208	.443	.507	.388	.391	.454	.482	.098	124
125	.295	.289	.291	.289	.535	.536	.279	.326	.022	-.026	.018	.211	-.044	-.071	-.215	-.054	.056	.101	.519	.387	.153	.467	-.032	.297	.310	-.010	-.412	-.095	.474	.092	.198	-.127	-.078	.325	-.247	.315	.396	.433	.487	.490	.507	.472	.380	125
126	.107	.104	.105	.104	.259	.264	.099	.123	.050	-.065	.038	.114	.120	-.165	-.282	-.206	.011	-.023	.320	.194	.087	.321	-.100	.147	.175	.005	-.181	.040	.219	.015	.087	-.005	-.118	.168	-.218	.151	.234	.255	.140	.138	.332	.288	.132	126
127	.024	.017	.025	.025	.008	.009	.025	.022	.156	-.207	.133	.184	-.178	-.108	.134	.091	-.152	-.061	-.063	-.047	-.047	-.048	-.048	.018	.086	.074	-.01[illegible]	.038	.006	-.021	.069	-.078	.004	-.087	.007	-.132	-.003	.023	.043	.042	-.049	-.054	.161	127
128	-.008	-.008	-.008	-.008	-.086	-.082	-.003	-.015	.193	-.175	.214	.146	-.078	-.125	-.034	-.126	-.051	-.037	-.249	-.100	-.066	-.267	-.068	-.064	.003	.020	-.030	-.105	.080	.125	.119	.049	-.083	-.228	-.143	-.141	.071	.103	-.122	-.123	-.020	.010	.132	128
129	-.188	.198	-.187	-.186	-.069	-.066	-.186	-.192	-.1[illegible]3	.117	-.123	-.419	.187	.139	.081	.016	-.025	.011	.038	-.024	-.011	.076	.066	-.119	-.131	.092	.168	.170	-.319	-.045	.014	.251	.098	-.166	.138	-.261	-.309	-.347	-.104	-.098	-.337	-.356	.073	129
130	-.102	-.099	-.098	-.097	-.267	-.268	-.096	-.114	.021	.023	.027	-.020	-.136	-.061	.087	-.032	-.107	.135	-.181	-.009	.030	-.122	-.067	-.078	.033	-.006	.191	-.074	-.076	-.059	.044	.034	.104	-.033	.179	-.054	.040	-.005	-.104	-.104	-.071	-.058	-.166	130
131	.119	.113	.119	.118	.061	.065	.118	.124	.504	-.406	.586	.555	-.169	-.148	-.152	-.156	-.049	-.254	-.153	-.212	-.274	-.199	-.148	.040	.034	.003	-.378	-.329	.519	.402	.331	-.182	-.128	.183	-.224	.278	.579	.623	.228	.233	.540	.584	-.006	131
132	.198	.195	.199	.198	.064	.072	.198	.200	.367	-.316	.394	.358	-.162	-.230	-.152	-.186	-.018	-.068	-.265	-.128	-.118	-.318	-.018	.118	.077	.096	-.320	-.319	.412	.461	.409	-.153	-.165	.128	-.392	.163	.519	.570	.162	.165	.469	.501	-.015	132
133	.075	.078	.073	.074	.106	.106	.072	.078	-.478	.308	-.459	-.398	.100	-.040	.152	.133	.050	.150	.191	.178	.204	.181	-.062	-.029	-.200	-.100	.107	.160	-.114	-.261	-.093	.023	.032	-.061	.049	-.162	-.144	-.198	.123	.123	-.128	-.164	-.027	133
134	-.025	-.031	-.028	-.028	.129	.131	-.027	-.020	.153	-.196	.189	.163	.016	-.175	-.208	-.142	-.061	-.051	-.141	-.086	-.039	-.162	-.019	.050	.078	.024	-.064	-.033	.068	.041	-.020	.030	-.089	-.030	-.121	.099	.202	.205	.036	.034	.206	.193	-.177	134
135	.162	.168	.165	.164	-.080	-.078	.160	.168	.378	-.196	.389	.453	-.188	-.198	-.178	-.234	.105	-.559	-.304	-.531	-.566	-.325	-.126	-.123	-.192	-.009	-.[illegible]54	-.233	.480	.406	.393	-.055	.089	.390	-.152	.351	.691	.719	.248	.249	.658	.692	-.172	135
136	.018	.019	.021	.022	-.284	-.282	.027	.004	.374	-.285	.430	.252	-.148	-.053	-.045	-.193	.045	-.273	-.752	-.543	-.408	-.750	-.030	-.233	-.129	.033	-.119	-.208	.145	.332	.218	.098	-.019	-.034	-.245	.053	.345	.403	-.138	-.137	.308	.364	-.405	136
137	.055	.052	.057	.057	-.094	-.092	.059	.048	.255	-.127	.228	.190	-.254	-.148	-.060	-.132	-.019	-.131	-.251	-.230	-.129	-.266	-.118	-.018	-.139	-.013	-.157	-.032	.123	.130	.242	-.013	.028	.096	-.066	.062	.347	.338	.023	.030	.232	.258	-.063	137
138	-.074	-.075	-.073	-.073	-.176	-.176	.067	-.088	.046	-.083	.128	.012	-.099	.159	-.034	-.150	.094	-.031	-.506	-.210	-.042	-.494	.010	-.172	.039	-.071	.060	.037	-.141	.054	.056	.272	-.059	-.204	-.092	-.128	.058	.070	-.161	-.160	-.025	-.002	-.245	138
139	.324	.328	.326	.323	.357	.357	.312	.350	.021	-.003	-.020	.175	-.150	-.056	-.115	.019	.015	-.087	.220	.071	-.087	.199	-.043	.154	.115	.080	-.363	-.021	.331	.117	.159	-.203	.026	.432	-.129	.385	.314	.361	.529	.530	.475	.459	.169	139
140	.317	.314	.315	.313	.414	.415	.305	.341	.047	-.094	.042	.201	-.070	-.098	-.070	.031	.071	-.107	.237	.077	-.073	.258	-.150	.117	.075	-.047	-.325	-.103	.392	.070	.123	-.301	.066	.426	-.094	.338	.332	.401	.395	.394	.499	.469	.085	140
141	.131	.136	.133	.131	.022	.022	.127	.140	.061	-.059	.065	.205	-.232	-.044	-.028	.041	.189	-.249	.030	-.137	-.186	.031	-.165	.029	-.028	-.089	-.350	-.035	.332	.114	-.230	.103	-.027	.224	-.181	.219	.368	.433	.316	.317	.364	.396	-.074	141
142	.322	.315	.323	.320	.394	.391	.311	.344	.019	.008	-.046	.254	-.138	.100	-.127	.054	-.031	-.031	.300	.144	-.027	.283	-.022	.203	.062	.078	-.295	.024	.257	.024	.177	-.208	.046	.358	-.077	.259	.243	.262	.393	.390	.344	.323	.128	142
143	.463	.459	.462	.459	.467	.468	.453	.480	.057	-.030	-.057	.311	-.161	.027	.006	.147	.085	-.042	.232	.122	-.041	.216	-.066	.145	.039	.039	-.328	-.151	.333	.274	.135	-.265	.176	.504	-.010	.348	.336	.342	.368	.374	.387	.379	.192	143
144	.191	.195	.190	.188	.297	.296	.179	.214	.123	-.055	.122	.274	-.167	-.171	-.153	.031	.046	.031	.305	.177	.026	.302	-.018	.189	.070	.033	-.369	.086	.281	-.009	.120	-.208	.032	.458	-.182	.383	.337	.360	.453	.453	.451	.421	.223	144
145	-.025	-.030	-.027	-.027	.063	.065	-.025	-.026	-.007	.011	.018	.149	.122	.176	.043	-.014	-.053	-.183	.065	-.132	-.096	.078	-.111	-.128	-.082	-.093	-.031	.062	.040	-.101	-.027	.024	.033	-.146	.108	-.174	-.060	-.104	-.011	-.010	-.130	-.169	.076	145
146	-.235	-.238	-.233	-.231	-.293	-.294	-.225	-.254	-.146	.049	-.123	-.212	.241	.071	.208	.094	.065	.057	-.281	-.146	.025	-.258	.084	-.143	-.134	.018	.[illegible]89	.039	-.385	-.119	-.143	.153	-.040	-.486	.089	-.490	-.381	-.392	-.386	-.387	-.555	-.518	-.209	146
147	.359	.361	.363	.362	-.026	-.024	.359	.361	.280	-.328	.328	.448	-.173	-.164	-.174	-.017	-.084	-.248	-.120	-.214	-.321	-.113	-.008	-.144	-.021	.078	-.260	-.287	.355	.378	.176	-.157	.110	.407	-.156	.315	.433	.446	.239	.242	.463	.488	-.038	147
148	.154	.158	-.152	-.150	-.327	-.325	-.142	-.174	-.061	.105	-.016	-.194	.034	.017	.119	.068	-.075	.092	-.402	-.177	-.061	-.384	.171	-.156	-.199	.113	.370	.046	-.383	-.103	-.147	.077	.089	-.357	.126	-.369	-.335	-.353	-.338	-.336	-.420	-.400	-.255	148
149	.095	.090	.092	.093	.127	.129	.094	.097	.231	-.213	.264	.113	-.117	.003	.065	-.109	.040	.051	-.117	.003	-.043	-.113	.171	.123	.091	.219	-.104	-.057	.027	.212	.088	-.173	.100	.115	-.093	.145	.150	.128	.040	.043	.130	.141	.059	149
150	.031	.029	.032	.032	-.113	-.113	.035	.027	.475	-.260	.503	.308	-.111	.075	-.117	-.153	-.044	-.116	-.397	-.232	-.150	-.437	-.048	.041	.089	-.027	-.127	-.108	.174	.138	.161	-.084	-.212	-.169	-.420	-.092	.239	.323	-.017	-.016	.229	.264	-.244	150
151	.177	.174	.175	.174	.219	.222	.167	.194	.043	-.140	.055	.199	-.029	-.226	-.023	.015	-.042	-.133	.296	.084	-.050	.279	-.094	.100	.056	.072	-.285	-.016	.253	.129	.211	-.034	-.001	.338	-.020	.257	.223	.215	.359	.360	.276	.239	.216	151
152	-.250	-.250	-.250	-.249	-.201	-.201	-.243	-.262	.073	-.069	.076	-.003	.096	-.020	.023	-.076	.107	-.177	-.231	-.238	-.196	-.200	.083	-.133	-.217	.076	.131	.023	-.191	.053	-.083	.216	.039	-.128	.140	-.164	-.158	-.155	-.257	-.259	-.208	-.203	-.071	152
153	-.240	-.240	-.241	-.240	-.180	-.179	-.234	-.251	.096	-.110	.133	.001	.094	.013	.023	-.101	.111	-.120	-.272	-.270	-.205	-.256	.089	-.092	-.247	.102	.093	.014	-.163	.088	-.040	.176	-.005	-.124	.066	-.156	-.119	-.126	-.189	-.191	-.173	-.164	-.150	153
154	.169	.155	.167	.167	.179	.181	.173	.165	.228	-.215	.229	.211	-.199	-.078	-.118	-.006	-.120	.137	-.149	.111	.077	-.202	-.007	.122	.265	.017	-.171	-.110	.159	.240	.126	-.153	-.340	-.148	-.348	-.107	.215	.286	-.008	-.005	.171	.219	-.009	154
155	.142	.129	.141	.140	.157	.159	.146	.138	.212	-.224	.228	.197	-.192	-.059	-.121	-.114	-.107	.182	-.163	.101	.075	-.218	-.019	.117	.267	.011	-.160	-.101	.138	.237	.131	-.121	-.343	-.169	-.348	-.126	.201	.272	-.018	-.015	.152	.199	-.013	155
156	.339	.319	.337	.336	.302	.304	.336	.345	.258	-.210	.239	.331	-.271	-.164	-.180	.013	-.185	.028	.130	.124	.015	.084	-.015	.087	.134	.093	-.333	-.125	.347	.232	.121	-.357	-.140	.203	-.258	.224	.343	.421	.193	.200	.416	.464	.097	156
157	.231	.228	.226	.226	.236	.235	.230	.233	.104	.167	-.018	.091	.025	-.138	-.048	.084	-.111	.138	.115	.158	.119	.139	.129	.146	.114	.005	-.080	-.166	.237	.077	-.023	-.251	.048	.122	.026	.117	.121	.109	.034	.041	.132	.128	.071	157
158	-.011	-.024	-.010	-.010	.039	.040	-.007	.018	.126	-.102	.165	.215	-.205	-.071	.027	.029	-.227	.171	.006	.144	.180	-.041	-.012	.198	.314	.042	.129	-.065	-.054	-.016	-.018	-.112	-.327	-.231	-.242	-.138	.069	.044	-.080	-.076	.018	.051	.040	158
159	.184	.165	.187	.186	.109	.111	.187	.182	.365	-.213	.310	.532	-.309	-.155	-.024	.018	-.203	-.030	.024	.005	-.045	.034	-.034	.078	.208	.074	-.093	-.236	.202	.243	.001	-.187	-.131	.092	-.189	.115	.238	.293	.118	.125	.247	.304	.098	159
160	-.207	-.207	-.207	-.206	-.083	-.087	-.205	-.212	.024	-.008	.014	-.200	.216	.277	.009	-.347	.167	-.217	-.092	-.251	-.174	-.089	.122	.038	-.200	.201	-.112	.350	-.133	-.182	.024	.172	.096	-.101	.141	-.063	-.083	-.119	-.131	-.130	-.182	-.173	-.093	160

TABLE 5.3 (cont'd)

VAR.	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	
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121	.568	1.000																																								121
122	.644	.504	1.000																																							122
123	.401	.213	.511	1.000																																						123
124	.224	.166	.316	.410	1.000																																					124
125	.597	.402	.600	.508	.368	1.000																																				125
126	.178	.086	.292	.263	.266	.369	1.000																																			126
127	.062	-.082	.099	.117	-.005	-.100	-.046	1.000																																		127
128	.093	-.073	.003	.020	.155	-.182	-.123	.267	1.000																																	128
129	.088	.140	-.158	-.114	-.249	-.065	-.019	.103	-.099	1.000																																129
130	-.078	-.101	.115	.059	-.075	-.211	-.045	.217	.111	-.014	1.000																															130
131	.089	-.044	.202	.486	.498	.274	.154	.144	.285	-.278	-.004	1.000																														131
132	.079	.017	.136	.317	.759	.240	.252	.071	.306	-.271	.060	.650	1.000																													132
133	.067	.111	.025	.056	-.100	.220	.039	-.125	-.275	.232	-.087	-.246	-.207	1.000																												133
134	-.091	-.256	.007	.125	.115	.095	.326	.193	.167	-.191	-.038	.185	.145	.022	1.000																											134
135	-.108	-.268	-.067	.131	.331	.167	.074	-.050	.050	-.246	-.018	.545	.462	-.294	.189	1.000																										135
136	-.325	-.486	-.357	-.087	.155	-.200	-.155	-.060	.342	-.304	.089	.440	.458	-.303	.212	.564	1.000																									136
137	-.046	-.096	-.102	.106	.115	.015	.020	-.084	-.018	-.007	.208	.172	.238	-.037	.028	.390	.309	1.000																								137
138	-.170	-.374	-.285	-.147	-.048	-.181	-.144	-.122	.219	-.214	.108	.096	.133	-.206	.108	.207	.649	.391	1.000																							138
139	.276	.077	.267	.223	.274	.420	.245	.010	-.128	-.168	-.168	.130	.168	-.053	-.045	.243	-.046	.104	-.076	1.000																						139
140	.180	-.001	.191	.172	.299	.393	.241	.054	-.075	-.190	-.056	.115	.083	-.030	.154	.292	.021	-.013	-.086	.409	1.000																					140
141	.120	-.061	.066	.226	.190	.215	.096	-.001	.004	-.032	-.020	.202	.190	-.061	.001	.454	.136	.273	-.024	.237	.213	1.000																				141
142	.250	.121	.277	.202	.243	.344	.104	.017	-.110	-.184	-.003	.062	.082	-.060	-.095	.162	-.092	.148	.011	.597	.418	.164	1.000																			142
143	.260	.157	.345	.249	.300	.369	.073	-.007	-.099	-.228	-.025	.185	.223	-.073	-.016	.269	-.059	.014	-.040	.514	.450	.128	.707	1.000																		143
144	.261	.180	.405	.325	.325	.396	.208	.081	-.187	-.116	.034	.080	.146	-.054	.000	.150	-.159	.048	-.223	.349	.378	.193	.244	.300	1.000																	144
145	-.036	-.079	-.033	-.085	-.167	-.026	.072	.034	-.052	.015	-.040	-.027	-.100	-.072	-.007	-.083	-.169	-.105	-.143	-.032	-.245	-.012	-.096	-.111	-.036	1.000																145
146	-.260	-.212	-.422	-.306	-.340	-.389	-.203	-.044	.052	.063	.041	-.264	-.207	.026	-.012	-.192	.062	-.029	.155	-.331	-.276	-.022	-.205	-.276	-.455	.026	1.000															146
147	-.071	-.189	.054	.139	.254	.108	.083	.091	.167	-.180	.057	.381	.329	-.132	.178	.480	.329	.189	.007	.211	.245	.178	.113	.227	.303	.022	-.367	1.000														147
148	-.243	-.134	-.369	-.263	-.254	-.387	-.239	.025	.027	.163	.210	-.200	-.087	.076	.002	-.064	.196	.184	.236	-.305	-.304	-.170	-.210	-.262	-.328	-.073	.520	-.295	1.000													148
149	.052	.015	-.027	-.031	.126	.135	.043	-.029	.121	.007	.068	.221	.231	-.105	.127	.170	.263	.116	.153	.007	.043	-.116	.015	.109	.035	-.085	.014	.105	.237	1.000												149
150	-.085	.210	-.073	.010	.223	.026	-.054	.023	.257	-.385	.075	.423	.412	-.328	.228	.343	.563	.213	.392	-.062	-.006	.095	-.049	-.074	-.026	-.104	.053	.130	.146	.158	1.000											150
151	.224	.118	.253	.287	.333	.293	.299	.045	-.089	.039	-.158	.218	.137	.027	.049	.129	-.211	-.105	-.301	.187	.168	.176	.196	.272	.247	.187	-.325	.268	-.403	.010	-.280	1.000										151
152	-.105	-.161	-.275	-.053	-.219	-.146	-.200	-.078	.081	.165	.021	-.017	-.141	-.123	-.013	.025	.191	.117	.209	-.226	-.202	-.198	-.150	-.188	-.228	.121	.201	-.001	.169	.036	-.018	-.095	1.000									152
153	-.123	-.171	-.295	-.053	-.157	-.117	-.215	-.122	.066	.142	-.023	.041	-.092	-.089	.019	.064	.216	.125	.189	-.211	-.221	-.162	-.173	-.134	-.208	.120	.241	.012	.203	.111	.050	-.063	.949	1.000								153
154	.185	-.039	.149	.168	.278	.192	-.053	.057	.162	-.402	.108	.286	.382	-.179	.177	.145	.313	.345	.319	.115	.085	.052	.107	.095	.043	-.161	.026	.153	.022	.146	.446	-.325	-.121	-.097	1.000							154
155	.175	-.045	.120	.147	.274	.182	-.065	.044	.159	-.392	.108	.277	.390	-.177	.176	.144	.327	.346	.334	.094	.065	.055	.092	.078	.031	-.147	.053	.138	.033	.154	.455	-.328	-.106	-.080	.995	1.000						155
156	.221	.027	.345	.253	.347	.305	.103	.073	-.022	-.374	-.086	.329	.300	-.118	.133	.252	.066	.168	-.020	.306	.281	.132	.268	.326	.256	-.117	-.291	.333	-.250	.019	.134	.057	-.352	-.342	.603	.558	1.000					156
157	.139	.096	.262	.179	.002	.147	.089	.157	.156	-.085	.078	.093	-.036	-.048	.037	.002	-.078	-.027	-.049	.118	.148	-.031	.056	.056	.058	-.126	-.149	.080	-.062	-.044	.070	-.220	-.094	-.105	.161	.091	.171	1.000				157
158	.067	.091	.193	.186	.151	.104	-.031	.130	.112	-.266	.186	.228	.224	-.101	.098	-.049	.038	.153	.011	-.009	-.106	-.019	.020	-.015	-.038	.027	.119	-.053	-.010	.106	.310	-.211	-.206	-.190	.563	.565	.304	.037	1.000			158
159	.145	.119	.304	.293	.284	.196	.098	.186	.015	-.283	.125	.386	.265	-.291	.111	.209	.122	.157	-.021	.198	.192	.171	.211	.254	.217	.019	-.075	.290	-.153	.071	.155	.120	-.169	-.177	.474	.446	.530	.104	.472	1.000		159
160	-.091	-.030	-.153	-.139	-.163	-.166	-.027	.028	-.016	.311	-.062	-.147	-.208	.026	-.032	-.091	-.009	-.150	-.026	-.157	-.123	-.077	-.177	-.148	-.171	.005	.105	-.257	.032	.064	-.086	-.094	.081	.104	-.374	-.365	-.297	-.110	-.165	-.284	1.000	160

TABLE 5.4

NEED VARIABLES HAVING INTERCORRELATIONS ≥ ± .70 FOR ALL DISTRICTS, WITH COMPARISON OF CORRESPONDING INTERCORRELATION BY CLASSES OF SCHOOL DISTRICT

Inter-correlation of Variables	Classes of District					
	All Districts	Medium City	Small City	Established Suburb	Developing Suburb	Agricultural Service Cen.
77 and 79	1.000	.996	.973	1.000	.988	.971
77 - 80	1.000	.997	.976	1.000	.988	.972
77 - 83	1.000	.997	.958	.999	.994	.959
79 - 80	1.000	1.000	.999	1.000	1.000	.999
79 - 83	1.000	.996	.986	.999	.991	.976
80 - 83	1.000	.996	.985	.999	.991	.979
81 - 82	1.000	.999	.999	.999	1.000	.999
115 - 116	.999	.995	1.000	.999	*	1.000
77 - 78	.998	.951	.751	.993	.938	.873
77 - 84	.998	.987	.903	.999	.978	.951
78 - 79	.998	.955	.729	.995	.940	.895
78 - 80	.998	.953	.737	.995	.941	.896
78 - 83	.998	.947	.721	.990	.935	.826
79 - 84	.998	.977	.800	.999	.948	.874
80 - 84	.998	.977	.807	.999	.949	.873
78 - 84	.997	.941	.667	.995	.914	.836
83 - 84	.996	.972	.743	.996	.950	.826
154 - 155	.995	.996	.998	.998	.998	.989
117 - 118	.978	.831	.952	.972	.982	.947
95 - 98	.962	.876	.973	.985	.989	.919
113 - 114	.949	.552	.921	.952	.802	.949
152 - 153	.949	.827	.981	.996	.984	.909
85 - 87	.880	.932	.753	.964	.911	.798
114 - 118	.873	.454	.749	.843	.602	.776
110 - 112	.857	.761	.806	.905	.578	.750
114 - 117	.855	.354	.771	.861	.506	.731
94 - 97	.853	.801	.709	.974	.945	.832
94 - 96	.813	.881	.684	.983	.944	.851
113 - 118	.813	-.155	.562	.898	.612	.683
113 - 117	.808	.007	.557	.931	.596	.638
96 - 97	.786	.825	.752	.971	.883	.728
124 - 132	.759	.661	.732	.559	.210	.903
114 - 135	.719	.371	.482	.800	.930	.399
142 - 143	.707	.706	*	*	*	*
98 - 136	-.750	-.441	-.648	-.745	-.835	-.684
95 - 136	-.752	-.394	-.675	-.744	-.860	-.742

*No data for these variables in this district class

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Variables 95 (pupils per teacher, 9-12) and 98 (average class size, 9-12) were found to have r = .962 for all districts and r ≥ .876 for each of the five classes of district. Because of this high correlation, and because of complications in computing Variable 98, it was eliminated.

An r = .999 was found between Variables 115 (median junior high school teacher salary) and 116 (mean junior high school teacher salary); r = .978 was found between Variables 117 (median senior high school teacher salary) and 118 (mean senior high school teacher salary); and r = .949 was found between Variables 113 (median elementary teacher salary) and 114 (mean elementary teacher salary). High correlations were also found between Variables 115 and 116 and between Variables 117 and 118 for the five classes of district. With the exception of medium cities, where r = .552 was found between Variables 113 and 114, correlations between these two variables ≥ .802. High intercorrelations were consistently found between elementary, junior high, and senior high school teachers' salaries, whether these are expressed as medians or means. Consequently, variables expressing mean teacher salary were retained and Variables 113, 115, and 117 were eliminated.

Variable 152 (percent of population age 21 or over voting in 1960 presidential election) was found to have r = .949 with 153 (percent of population age 21 and over voting in 1960 gubernatorial election). Since it was decided to retain only one measure of voter participation, Variable 153 was eliminated.

Variables 154 (percent of 1960 population living elsewhere in 1955) and 155 (percent of 1960 population living elsewhere in the United States in 1955) were found to have r = .995. Correlations ≥ .989 were found between these two variables in each of the five classes of district. Variable 154 was discarded in favor of 155.

Variables 157 (percent of 1960 population moved with previous residence not reported) and 158 (percent of 1960 population living in a different county or standard metropolitan statistical area in 1955) were eliminated; the former because it did not add materially to knowledge about population mobility and the latter because several of the school districts included in the study were located within the same standard metropolitan statistical area (S. M. S. A.). It was necessary to apply the average for the S. M. S. A. to such districts thus obscuring the impact of population mobility on these districts. This problem also exists where school districts have area in two or more counties. Because of inaccuracies associated with Variable 158 it was eliminated.

Multiple Correlation of Ability Variables

The coefficient multiple correlation (R) of each ability variable with all other ability variables was computed in three successive runs. After each run certain variables were eliminated from the list and R of the remaining variables were again computed. The R found for each variable in successive computer runs is given in Table 5.5.

Thirteen variables were eliminated from further consideration after R had been computed for the 69 variables included in the first computer run.

TABLE 5.5

COEFFICIENTS OF MULTIPLE CORRELATION OF SELECTED VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION IN 104 WISCONSIN SCHOOL DISTRICTS

Variable Number	R After:		
	Run 1	Run 2	Run 3
1	.999	.821	.810
2	.955	.934	.928
3	.927	.899	.882
4	.994	.991	.990
5	.916	.949	.854
6	.979	.969	.966
7	.965	.955	.929
9	1.000	---	---
10	.905	---	---
11	.891	---	---
12	.904	.863	.815
13	.993	---	---
14	.981	.974	.969
16	.994	.986	.980
17	.975	.962	.955
18	.896	.803	.780
20	.999	.999	---
21	.998	.998	---
22	.997	.996	---
23	.999	.999	---
24	.998	.998	---
25	.988	.985	---
26	.984	.979	---
27	.948	.924	.885
28	.876	.833	.804
29	.863	.813	.788
31	.995	.994	---
32	.988	.974	.897
33	.997	.984	.957
34	.988	.986	.907
35	.988	.982	.979
36	.980	.974	.968
37	.988	---	---
38	.997	.984	.983
39	.927	.892	.875
40	.890	.849	.831
41	.882	.865	.829
42	.861	.807	.781
43	.786	.747	.655
44	.842	.796	.777
45	.949	.921	.905
47	.912	.888	.869
49	.930	.908	.856
50	.959	.949	.924
51	.956	.929	.888
52	.895	.816	.793
53	.896	.858	.845
54	.825	.746	.695
55	.963	.944	.940
56	.974	.961	.956
57	.786	.732	.680
58	.920	.854	.838
59	.957	.929	.921
61	.924	.896	.882
62	.915	.870	.846
63	1.000	.916	.881
64	1.000	.827	.758
65	1.000	.928	.918
66	.999	.844	.759
67	.957	.801	.765
68	1.000	.801	.788
69	1.000	---	---
70	1.000	---	---
71	1.000	---	---
72	.999	---	---
73	1.000	---	---
74	.994	---	---
75	1.000	---	---
76	1.000	---	---
Total No. of Variables	69	56	48

Variable 9 (number of families in school district) was found to have R = 1.00. [This was expected in view of the fact that r = 1.00 had previously been found between Variables 9 and 1 (population of school district).] Variables 10 (bank footings per capita) and 11 (assets of savings and loan institutions per capita) were eliminated because of their lack of merit. Data for these variables indicate only whether such financial institutions exist within a district. Data were not available on a school district basis and to compute the data on a school district basis, it was necessary to make several assumptions relative to the distribution of assets of financial institutions on a per-capita basis. Variable 13 (mean family income) was found to have R = .993. Earlier it had been noted that Variable 13 had r = .901 with 16 (net reported personal income tax per capita); r = .872 with 14 (effective buying income per capita); and r = .846 with 4 (equalized valuation of residential property per capita). Consequently, Variable 13 was eliminated. Variable 37 (income tax from state per capita) was found to have R = .988 and was eliminated. It had been found earlier to have r = .864 with Variable 16 (net reported personal income tax per capita). Variable 69 (receipts per pupil from all other sources) was eliminated since, as a miscellaneous category, it did not readily lend itself to comparisons between districts. Variables 70 through 76, all of which express school district receipts from various sources on a per-capita basis, were eliminated. These variables exhibit R ≧ .994 in all cases. Earlier, high intercorrelation between a school district revenue source expressed on a per-capita basis and the same revenue source expressed on a per-pupil basis had been noted. Consequently, variables expressing school district revenue on a per-pupil basis were retained.

A total of eight variables were eliminated after computation of R for the 56 variables which remained after the first computer run. Variables 20 through 26, all of which express percent of labor force in various categories of employment, were eliminated at this point. These seven variables were found to have R ≧ .979. In fact, five of the seven variables were found to have R ≧ .996. Consequently, these variables were eliminated because they can be predicted with a high degree of accuracy from the variables which were retained. Variable 31 (total general property tax rate) was found to have R = .994. This variable represents a summation of Variables 32 (county tax rate on equalized valuation), 33 (municipal tax rate on equalized valuation), and 34 (school tax rate on equalized valuation), all of which were retained.

Eight additional variables were eliminated after computing R for the remaining 48 variables. The factor analysis of ability variables reported later in this chapter was helpful in determining the variables to be eliminated. Although a relatively low R = .882 was found for Variable 3 (assessed valuation per capita) it was eliminated due to limitations of these data. Since accurate equalized valuations were available for all Wisconsin school districts no advantage was gained by retaining the relatively inaccurate assessed valuation data. Assessed valuation was found to be a specific factor (Factor V-1) which accounted for only .6 percent of the total variance of the 48 variables when factor analysis was employed. Variable 6 (equalized valuation of manufacturing property per capita) was found to have R = .966 and was eliminated. In addition, it had earlier been found to have r = .829 with Variable 17 (net reported corporate income tax per capita). Factor analysis of the 48 variables revealed that Variables 6 and 17 exhibited very similar relationships to Factor C-1. Variable 14 (effective buying income per capita) was found to have R = .969. Earlier, it was found to have r = .809 with Variable 4 (equalized valuation of residential property per capita) and r = .798 with Variable 16 (net reported personal income tax per capita). Factor analysis revealed Variable 14 to be closely related to Factor A-1. Since Variable 16 was even more closely related to Factor A-1, 14 was eliminated. While Variable 18 (retail sales per capita) was found to have a relatively low R = .780, the variable was eliminated on the ground that retail sales within a school district do not accurately reflect that district's ability to support education. Retail sales are not restricted to residents of the school district in which the retail establishment is located. Consequently, retail sales are somewhat atypical of a district's ability to support education. Factor analysis indicated that the variable was not closely related to any single factor, its highest correlation being .408 with Factor N-1. Variable 28 (postal receipts per capita) also was found to have a relatively low R = .804. It, too, was discarded as somewhat atypical of ability to support education. Furthermore, data on postal receipts for school districts are exceedingly difficult to obtain, and several assumptions are required in computation. Factor analysis revealed Variable 28 to have no high correlation with any factor, the highest being .433 with Factor F-1. Variable 35 (receipts from general property tax per capita) was found to have R = .979 and was discarded. Earlier, it had been found to have r = .732 with Variable 4 (equalized valuation of residential property per capita) and r = .738 with Variable 65 (receipts per pupil from local sources). Factor analysis revealed this variable to be most closely related to Factor A-1. For Variable 36 (receipts from general property tax for municipal purposes per capita) R = .968 was found. It had earlier been found to have r = .735 with Variable 33 (municipal tax rate on equalized valuation). Factor analysis revealed Variable 36 to be closely related to Factor B-1, as was 33. Since data for Variable 33 were taken directly from public records, 36 was eliminated. A relatively low R = .838 was found for Variable 58 (securities purchased by municipalities per capita). This variable was found to consitute a specific factor, Factor AA-1, which accounted for about one percent of the total variance. However, the correlation of Variable 58 with Factor AA-1 was .490.

Multiple Correlation of Need Variables

The R of each need variable with all other need variables was computed in two runs. Certain variables were eliminated after each run. The R found for each need variable in the two computer runs is shown in Table 5.6. It should be noted that Variable 161 (mean teacher salary, K-12) was added after the first computer run. In view of the high intercorrelations found between Variables 114, 116, and 118 (elementary, junior high, and senior high school mean teachers' salaries) and the high R found for each of these three variables, it was deemed appropriate to eliminate them and substitute Variable 161.

In addition to Variables 114, 116, and 118 six others were eliminated after the first computer run. R = .999 was found for Variable 78 (total

TABLE 5.6

COEFFICIENTS OF MULTIPLE CORRELATION OF SELECTED VARIABLES RELATED TO NEED FOR EDUCATIONAL SERVICES IN 104 WISCONSIN SCHOOL DISTRICTS

Variable Number	R After:	
	Run 1	Run 2
78	.999	---
80	.999	.817
82	.893	.872
85	.962	.898
86	.912	.802
87	.981	---
88	.921	.898
89	.885	.858
90	.864	.786
91	.873	.816
92	.873	.811
93	.873	.799
94	.984	.907
95	.983	.963
96	.992	---
99	.950	.901
100	.867	.801
101	.954	.929
102	.925	.910
103	.995	.929
104	.996	---
105	.995	.868
106	.986	.840
107	.889	.839
108	.910	.837
109	.925	---
110	.973	---
111	.945	.845
112	.958	.900
114	.981	---
116	.892	---
118	.990	---
119	.841	.869
120	.925	.907
121	.912	.889
122	.933	.909
123	.881	.851
124	.942	.934
125	.946	.932
126	.844	.830
127	.856	.802
128	.850	.824
129	.906	.874
130	.890	.834
131	.921	.907
132	.951	.947
133	.886	.871
134	.812	.783
135	.943	.935
136	.980	.966
137	.918	.888
138	.946	.913
139	.857	.805
140	.861	.833
141	.885	.842
142	.903	.885
143	.938	.904
144	.843	.810
145	.813	.758
146	.866	.848
147	.924	.868
148	.869	.840
149	.860	.798
150	.903	.874
151	.921	.898
152	.834	.787
155	.959	.943
156	.924	.897
159	.872	.850
160	.891	.839
161	---	.963
Total No. of Variables	70	62

population, age 5-18). It had earlier been found to have r = .998 with Variable 80 (total resident A. D. M.). In view of these correlations, Variable 78 was eliminated. Variable 87 (mean percentile of tested population) was found to have R = .981. Earlier, r = .880 had been found with Variable 85 (ratio of pupils in highest decile to total tested population). Consequently, 87 was discarded. Variable 96 (pupils per teacher, K-12) was found to have R = .992. Since it had r = .813 with Variable 94 (pupils per teacher, K-8), Variable 96 was discarded. Variable 104 (percent of teachers with four but less than five years of professional preparation) was found to have R = .996. Since the investigators were more concerned with teachers having above and below average preparation, it was decided to eliminate Variable 104 and retain 103 (percent of teachers with less than four years preparation), 105 (percent of teachers with five years of preparation), and 106 (percent of teachers with more than five years of preparation). Variables 109 and 110 (median years of local teaching experience, elementary and secondary teacher, respectively) were discarded in favor of Variables 111 and 112 (total teaching experience of the elementary and secondary staff, respectively). Variable 109 was found to have R = .925 and 110 was found to have R =.973. The latter had earlier been found to have r = .857 with 112 and r = .623 had been found between Variables 109 and 111. At this point the decision was made to discard variables measuring local teaching experience in favor of those measuring total teaching experience.

Intercorrelation of Need and Ability Variables

Product moment coefficients of correlation were computed for 100 variables (the maximum number which the computer program would accommodate). Intercorrelations between variables were computed for all districts, as well as for medium cities, small cities, established suburbs, developing suburbs, and agricultural service centers. The matrix of intercorrelations between the 100 variables for all districts is shown in Table 5.7

Surprisingly few high intercorrelations between ability and need variables were found. One pair of variables with $r \geq \pm .90$ was identified; no variables with $r \geq \pm .80$ but $< \pm .90$ were found; and eight pairs of variables with $r \geq \pm .70$ but $< \pm .80$ appeared. All pairs of variables having intercorrelations $\geq \pm .70$ for all districts and the corresponding intercorrelation of each pair in the five classes of district are shown in Table 5.8. In only two cases was $r \geq \pm .70$ found between one of the original ability variables and one of the original need variables. A correlation of .998 was found between Variables 1 (population of school district) and 80 (total resident A. D. M.) for all districts. The correlation between these two variables was $\geq .948$ in established suburbs, developing suburbs, and medium cities; .881 in agricultural service centers; and .761 in small cities. Variables 16 (net reported personal income tax per capita) and 131 (percent of total high school enrollment in foreign language classes) were found to correlate at .715 for all districts. Intercorrelation between these two variables in the five classes of district, however, were widely spread, ranging from r = .259 in medium cities to r = .891 in developing suburbs.

TABLE 5.7

INTERCORRELATIONS BETWEEN 100 SELECTED VARIABLES RELATING TO ABILITY TO SUPPORT EDUCATION AND NEED FOR EDUCATIONAL SERVICES

VAR.	1	2	4	5	7	12	16	17	27	29	32	33	34	38	39	40	41	42	43	44	45	47	49	50	51	52	53	54	55	56	57	59	61	62	63	64	65	66	67	68	80	85	86	88	
1	1.00																																												
2	.02	1.00																																											
4	.08	.53	1.00																																										
5	.29	.10	.19	1.00																																									
7	-.19	-.09	-.31	-.25	1.00																																								
12	-.28	.02	-.26	-.38	.14	1.00																																							
16	.08	.23	.78	.16	-.32	.15	1.00																																						
17	.13	.28	.19	-.02	-.33	-.04	.12	1.00																																					
27	.06	.08	.59	.19	-.21	.05	.53	.02	1.00																																				
29	-.14	-.11	-.18	-.01	.27	.03	-.17	-.03	-.03	1.00																																			
32	.04	-.11	-.04	.20	-.06	.05	.05	-.18	-.12	.03	1.00																																		
33	.26	-.18	-.43	.21	.03	-.40	-.34	-.09	-.35	-.05	-.09	1.00																																	
34	-.06	-.07	.16	.13	.04	.24	.12	-.34	.17	.06	.14	-.35	1.00																																
38	.01	-.04	-.10	.09	-.03	-.07	-.09	.24	.02	.00	-.07	.04	.01	1.00																															
39	.06	.12	.43	-.07	-.15	.16	.16	.02	.38	.16	.03	.17	.08	-.08	1.00																														
40	.16	.04	.21	-.09	-.23	.13	.05	.01	.21	.08	.16	-.06	.17	.15	.51	1.00																													
41	.52	.07	.31	.17	-.26	.30	.38	.10	.25	.09	.12	.01	.08	.06	.22	.32	1.00																												
42	-.10	-.20	-.45	.04	.26	.06	-.34	-.19	-.24	.19	.24	.15	-.03	.11	-.21	.08	-.18	1.00																											
43	.09	-.11	-.19	-.14	.32	-.10	-.19	-.21	-.06	.04	-.14	.11	-.08	-.06	-.03	-.08	-.03	.03	1.00																										
44	.26	.01	-.01	.44	.17	-.24	-.03	.13	.05	.14	-.12	.25	-.18	.18	.00	-.09	.05	.07	-.08	1.00																									
45	-.11	-.05	-.26	-.01	.20	-.14	-.20	-.02	-.18	.06	-.14	.17	-.25	-.03	-.20	-.33	-.18	.06	.11	.20	1.00																								
47	.18	-.08	-.09	.40	-.22	-.20	-.07	-.02	.05	.09	.31	.12	.15	.23	-.12	.06	.04	.12	-.04	.14	.05	1.00																							
49	.05	.03	.19	-.10	-.02	.06	.19	.04	.14	.02	.08	-.08	.02	.06	.04	.17	.13	.09	.07	.00	-.06	-.03	1.00																						
50	.28	.06	.22	.19	-.29	-.29	.32	.28	.19	-.16	-.07	.17	-.17	.21	.05	.15	.31	.01	-.15	.19	-.06	.08	.57	1.00																					
51	.17	.11	.41	.10	-.17	.02	.36	.14	.28	.07	-.08	-.05	-.06	-.05	.14	.08	.23	.02	-.08	.12	-.05	-.02	.66	.67	1.00																				
52	-.04	-.09	-.17	.02	.12	-.06	-.12	-.18	.11	.05	-.04	.13	-.02	.04	.09	-.16	-.20	.13	.06	-.04	-.07	.04	.09	.06	.04	1.00																			
53	.09	.06	.04	-.14	.12	-.05	.01	.06	.06	.28	-.04	.01	-.21	.05	.50	.31	.19	.09	.10	.09	.03	-.04	.26	.27	.19	-.16	1.00																		
54	.01	.14	.07	-.04	.14	.10	.02	-.10	.06	.09	-.10	-.07	.10	-.06	-.04	.02	.06	.06	.10	.05	.14	-.08	.13	-.01	.28	.04	-.11	1.00																	
55	.00	.01	-.06	.05	-.12	-.06	.01	.03	-.06	-.24	-.02	.20	-.10	-.01	-.10	-.03	-.09	.07	-.11	.09	.01	.18	-.02	.09	-.02	.21	-.15	-.16	1.00																
56	.07	.05	.21	.04	.08	-.08	-.14	-.02	-.24	-.10	-.01	.17	-.15	-.05	-.15	-.18	-.14	.04	.02	.11	.58	-.05	-.03	.01	-.06	-.10	-.06	.04	.68	1.00															
57	-.18	.02	.01	.05	.09	-.01	.08	.01	-.01	-.03	-.04	.04	-.05	-.13	.07	-.10	-.12	.01	-.04	.05	.23	.03	-.06	-.04	-.02	-.11	.08	.06	-.12	.03	1.00														
59	.04	.05	.08	.11	-.14	-.07	.09	.22	.08	-.01	-.04	.02	.14	.17	.02	.06	.11	-.12	-.15	.12	-.10	.01	.01	.17	.01	-.14	.04	.02	.18	.12	-.03	1.00													
61	-.06	-.10	-.20	-.03	.14	-.04	-.15	-.10	-.22	.14	-.18	.16	.09	.03	-.18	-.05	-.11	.05	.05	.11	.09	-.07	-.05	-.09	-.18	-.06	-.14	.15	-.11	.02	.10	.13	1.00												
62	-.13	.14	-.08	-.12	.06	.01	-.15	.18	-.09	.07	.04	.09	-.03	-.10	.07	.00	-.16	.02	.08	-.17	-.05	-.12	-.12	-.09	-.15	-.01	.02	.05	-.15	-.11	.16	.05	-.01	1.00											
63	-.16	-.24	-.45	-.24	.24	.11	-.37	-.39	-.19	.15	.36	-.03	.35	.02	-.11	.15	-.18	.38	.07	-.28	-.09	.15	-.09	-.26	-.34	.12	-.08	-.07	-.13	-.08	-.03	-.25	.09	.02	1.00										
64	-.20	.10	-.15	-.04	.01	-.05	-.18	-.13	-.23	.21	.03	.16	-.08	-.07	.12	-.08	-.21	-.07	.00	.03	.26	.03	-.14	-.19	-.19	-.03	.14	.08	.02	.20	.09	-.19	-.02	.06	-.05	1.00									
65	.14	.26	.71	.02	-.16	.20	.66	.37	.47	-.23	-.16	-.35	.22	.00	.27	.13	.34	-.37	-.16	-.03	-.26	-.23	.19	.28	.35	-.13	.05	.10	-.03	-.18	.01	.25	-.16	.02	-.46	-.33	1.00								
66	-.16	-.09	-.28	-.17	.43	.15	-.28	-.35	-.22	.18	.18	.10	.08	-.10	-.19	-.10	-.21	.21	.32	.09	.11	-.02	-.06	-.31	-.21	-.05	.03	.12	-.06	.10	.08	-.18	.06	.10	.34	.19	-.32	1.00							
67	-.07	.14	.49	-.02	-.05	.17	.49	.01	.18	-.12	-.12	-.11	.09	.07	.14	.02	.13	-.28	.10	-.06	.03	-.16	.26	.10	.21	-.11	-.03	.04	-.03	.03	.08	-.02	.04	-.09	-.22	.04	.36	-.11	1.00						
68	-.04	.04	-.02	-.11	.05	.24	.00	.29	-.01	.00	.06	-.09	.06	.02	-.01	-.03	-.10	.13	-.06	-.09	-.11	-.06	-.05	.02	-.05	-.09	-.04	.01	-.03	.08	-.06	.14	-.13	.09	.01	.00	.12	-.01	-.06	1.00					
80	1.00	.02	.10	.30	-.20	-.28	.10	.14	.07	-.13	.03	.25	-.04	.02	.06	.17	.53	-.10	-.09	.26	-.13	.19	.05	.29	.17	-.04	.09	.01	-.01	-.08	-.18	.05	-.05	-.13	-.16	-.22	.15	-.16	-.06	-.04	1.00				
85	.00	.19	.58	.13	-.18	.03	.70	.03	.49	-.13	-.07	-.24	.25	-.02	.17	.06	.21	-.31	.06	.03	-.21	-.06	.05	.24	.24	-.03	-.03	.03	-.06	-.21	-.03	.09	-.09	-.06	-.16	-.17	.46	-.03	.34	-.09	.02	1.00			
86	-.08	-.12	-.39	-.13	.10	.00	-.39	.06	-.24	.11	-.07	.00	-.17	-.11	-.20	-.23	-.28	.15	-.05	.00	.11	-.13	-.06	-.22	-.24	.10	-.08	.00	.00	.07	.04	-.04	.12	.09	.08	.07	-.22	.02	-.26	.05	-.10	-.48	1.00		
88	.13	.11	.50	.23	-.19	-.12	.66	.02	.50	.08	.05	-.27	.22	-.02	.13	.10	.35	-.18	-.07	-.07	-.26	.04	.20	.28	.25	.10	-.01	.00	-.01	-.21	.10	.14	.07	-.01	-.13	-.35	.41	-.25	.26	-.11	.15	.57	-.41	1.00	
89	-.09	-.07	-.23	.13	.02	.09	-.19	-.04	-.30	-.01	.21	.10	-.11	-.05	-.17	-.20	-.16	.01	.01	.01	.25	.25	-.18	-.16	-.18	-.13	-.08	-.02	.08	.28	-.01	-.15	.07	-.15	-.01	.33	-.25	.05	-.16	.07	-.10	-.22	.16	-.37	1.
90	-.04	-.05	-.11	-.07	.09	.02	-.11	-.07	-.26	.17	-.12	.06	.10	-.06	-.00	-.09	-.19	-.02	.13	.05	-.07	-.09	-.10	-.08	-.05	-.06	.10	.04	.07	.05	-.03	.04	-.02	.08	-.09	.25	-.10	.21	-.11	.00	-.04	.01	.06	-.12	.
91	.00	-.04	-.17	-.09	.31	.06	-.17	.23	-.09	.08	.05	-.11	-.04	-.13	-.12	-.07	-.14	.23	.11	.06	.09	-.15	-.13	-.25	-.19	.06	.04	.10	.03	.04	.06	-.07	.13	-.08	.08	-.02	-.08	.18	-.03	-.05	-.01	-.16	.31	-.22	-.
92	.19	-.06	-.21	.18	.10	-.09	-.24	-.01	-.23	.15	.26	.06	-.12	.00	-.08	.06	.03	.10	.11	.16	-.10	.13	-.15	-.12	-.19	-.14	.02	-.11	-.13	-.12	.03	.11	.12	.18	.15	-.09	-.23	.06	-.20	-.09	.19	-.25	.11	-.15	.
93	.01	.05	.03	-.01	-.20	.14	.04	.25	-.02	-.09	-.07	-.01	-.33	.18	.09	.06	-.13	-.05	-.11	.26	.19	-.05	-.01	.02	-.02	-.07	.25	-.01	.04	.10	.14	.02	-.12	.07	-.30	.13	.14	-.19	-.01	-.03	-.01	-.13	.07	-.15	.
94	.12	-.12	-.25	-.10	.16	-.04	-.41	-.05	-.13	.03	-.18	.01	-.16	.07	-.03	-.02	-.02	-.11	.16	-.05	-.09	.05	-.19	.21	-.17	-.01	-.07	.04	-.23	-.14	-.22	-.12	.00	.05	.07	-.10	-.29	.03	-.19	.00	.12	-.26	.10	-.34	.

ED FOR EDUCATIONAL SERVICES

9	61	62	63	64	65	66	67	68	80	85	86	88	89	90	91	92	93	94	
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3	1.00																		61
5	-.01	1.00																	62
25	.09	.02	1.00																63
9	-.02	.06	-.05	1.00															64
25	-.16	.02	-.46	-.33	1.00														65
8	.06	.10	.34	.19	-.32	1.00													66
2	.04	-.09	-.22	.04	.36	-.11	1.00												67
4	-.13	.09	.01	.00	.12	-.01	-.06	1.00											68
5	-.05	-.13	-.16	-.22	.15	-.16	-.06	-.04	1.00										80
9	-.09	-.06	-.16	-.17	.46	-.03	.34	-.09	.02	1.00									85
4	.12	.09	.08	.07	-.22	.02	-.26	.05	-.10	-.48	1.00								86
4	.07	-.01	-.13	-.35	.41	-.25	.26	-.11	.15	.57	-.41	1.00							88
5	.07	-.15	-.01	.33	-.25	.05	-.16	.07	-.10	-.22	.16	-.37	1.00						89
4	-.02	.03	-.09	.25	-.10	.21	-.11	.00	-.04	.01	.06	-.12	.03	1.00					90
7	.13	-.08	.08	-.02	-.08	.18	-.03	-.05	-.01	-.16	.31	-.22	-.05	-.01	1.00				91
1	.12	.18	.15	-.09	-.23	.06	-.20	-.09	.19	-.25	.11	-.15	.01	.01	.25	1.00			92
2	-.12	.07	-.30	.13	.14	-.19	-.01	-.03	-.01	-.13	.07	-.15	.02	.06	.18	-.07	1.00		93
2	.00	.05	.07	-.10	-.29	.03	-.19	.00	.12	-.26	.10	-.34	.11	.04	.06	.23	-.16	1.00	94

TABLE 5.7 (cont'd)

VAR.	1	2	4	5	7	12	16	17	27	29	32	33	34	38	39	40	41	42	43	44	45	47	49	50	51	52	53	54	55	56	57	59	61	62	63	64	65	66	67	68	80	85	86	88	89
95	.09	-.12	-.29	-.22	-.27	-.34	-.18	.04	-.12	.02	.22	.36	-.40	.10	-.25	-.23	-.04	.01	-.12	.38	.16	.04	-.16	.08	-.13	.08	-.16	-.16	.15	.13	.07	-.08	.02	-.03	-.07	-.03	-.38	-.07	-.14	-.27	.09	-.19	.12	.01	.01
99	-.04	-.03	-.11	-.03	.18	.03	-.12	.00	.19	-.03	-.01	.05	-.19	-.12	-.10	-.20	-.14	.00	.11	-.04	.10	-.01	-.08	-.09	-.05	.14	-.03	-.02	-.06	-.03	-.10	-.14	-.05	-.11	-.06	.01	-.09	.20	-.11	.21	-.05	-.02	.03	-.14	.32
100	-.01	-.03	.04	.11	-.15	.02	.05	.11	.05	-.06	-.36	.04	-.19	.11	-.12	-.10	.04	-.14	-.04	.12	.08	.03	-.01	.12	.06	.00	-.16	.00	.09	.10	.03	.07	.00	-.14	-.16	-.13	-.03	-.09	.02	-.04	-.00	.10	.04	.01	.08
101	.15	-.13	.03	-.07	-.13	.04	-.06	-.03	.04	-.04	-.08	.04	.08	.09	-.03	.10	.18	-.07	.02	.06	-.24	.03	-.01	-.04	.05	-.09	-.22	.07	-.10	-.21	-.25	-.03	-.05	.02	.14	-.42	-.06	.10	-.01	-.06	.17	.02	-.21	.05	-.19
102	-.04	.02	.03	-.02	.06	.04	.05	.14	-.05	-.02	-.13	.03	-.14	-.03	-.09	-.24	-.08	-.01	.01	.02	.10	.01	.05	.13	.10	.10	-.06	.02	-.05	-.06	-.09	-.04	-.08	-.10	-.12	-.01	.04	.13	.02	.20	-.03	.21	-.09	-.01	.04
103	-.21	-.16	-.39	-.24	.46	.21	-.41	-.27	-.36	.17	.18	-.04	.02	-.08	-.18	.05	-.26	.32	.20	-.28	.03	-.01	-.11	-.43	-.27	-.10	-.02	-.06	-.20	-.04	.04	-.28	.05	.13	.55	-.05	-.45	.40	-.14	.07	-.21	-.26	.10	-.28	.09
105	.20	.17	.43	.28	-.53	-.26	.48	.29	.29	-.11	-.03	-.02	-.06	.06	.19	.11	.34	-.30	-.20	.19	-.03	.06	-.05	.33	.15	-.09	-.06	-.05	.02	-.04	.02	.16	-.06	-.07	-.39	-.17	.39	-.48	.21	.00	.21	.31	-.12	.40	-.09
106	.35	.05	.40	.25	-.13	-.03	.48	.04	.29	-.22	.09	-.02	.08	.06	.23	.12	.39	-.22	-.14	-.01	-.26	-.02	.04	.23	.17	-.14	.09	.05	-.08	-.20	.03	.16	-.08	-.05	-.19	-.23	.41	-.22	.25	.14	.36	.29	-.25	.28	-.13
107	.14	.07	.28	.17	-.25	-.07	.28	.14	.18	-.16	-.06	-.07	.25	.12	.07	.00	.16	-.18	.16	.09	-.05	.03	.00	.12	.10	-.01	-.04	.01	.16	.02	-.05	.06	.01	-.24	-.14	-.18	.35	-.25	.18	-.09	.15	.21	-.13	.14	.04
108	-.16	.04	-.11	-.20	.11	.19	-.13	-.15	-.33	.03	.15	-.08	.04	-.13	.05	-.05	-.18	.16	.09	-.10	.16	-.13	-.03	-.25	-.03	-.25	.10	.09	-.12	.11	-.13	-.17	-.01	-.03	.24	.12	-.13	.20	-.04	.04	-.17	-.21	.10	-.26	.14
111	-.13	-.18	-.35	.03	.02	-.16	-.21	-.33	-.30	-.02	.29	.29	-.15	-.08	-.21	-.01	-.18	.30	.10	-.13	.06	.02	-.17	-.12	-.17	.14	-.05	-.12	.10	.06	.08	-.10	.10	-.04	.33	.25	-.45	.19	-.16	-.21	-.15	-.11	.08	-.11	.08
112	.16	.05	.14	.24	-.49	-.29	.32	.26	.17	-.13	-.14	.16	.21	.12	-.03	.08	.24	-.11	-.22	.25	-.16	.03	-.04	.32	.13	.14	-.11	-.06	.12	-.14	.00	.21	-.02	-.10	-.22	-.31	.25	-.44	-.05	.06	.16	.23	-.08	.32	-.23
119	.06	-.07	-.08	.17	-.17	-.12	-.04	-.06	.04	-.02	-.09	.22	-.20	.05	-.06	-.08	-.04	-.10	-.05	.19	.08	.02	-.21	.01	-.11	.23	-.17	.03	.13	.06	.02	-.09	.07	-.07	.01	-.09	-.23	.01	.04	-.27	.07	-.03	-.01	.11	-.10
120	.14	.02	.08	.16	-.26	-.05	.02	.08	.05	-.03	-.23	.20	-.18	.16	.02	-.09	.09	-.18	-.17	.39	.00	.07	-.06	.15	.06	.23	-.04	-.06	.06	-.02	-.10	.04	.02	-.04	-.20	-.12	-.08	-.09	.06	-.20	.16	.05	-.06	.05	-.19
121	.06	-.01	-.14	.14	-.06	-.16	-.05	.00	-.04	.00	-.36	.25	-.37	.03	-.15	-.27	-.02	-.10	.02	.19	.24	-.07	-.23	-.01	-.18	.14	-.08	-.24	.00	.10	-.05	-.05	.07	.10	-.08	.05	-.25	-.01	.02	-.10	.06	-.00	.07	-.01	-.06
122	.18	.03	.05	.18	-.27	-.35	.03	.11	.08	-.04	-.24	.10	-.21	.04	-.09	-.12	.19	-.25	-.14	.24	-.03	.06	-.16	.14	.00	.05	-.13	.21	.04	.00	-.13	.16	-.10	-.12	-.16	-.18	-.07	-.22	.06	-.22	.19	.06	.04	.20	-.24
123	.20	.05	.17	.15	-.22	-.25	.17	.08	.22	-.11	-.17	-.03	-.01	.04	.09	.05	.27	-.17	-.08	.18	-.01	.12	.05	.24	.10	-.16	.06	-.02	-.05	.06	-.05	.27	-.00	-.11	-.14	-.36	.16	-.25	.12	-.25	.21	.20	-.13	.24	-.10
124	.20	.14	.36	.14	-.22	-.20	.28	.20	.30	-.18	-.33	.03	.08	.09	.13	.01	.31	-.30	-.03	.08	.01	.08	-.02	.24	.10	-.07	-.08	.02	.08	.08	-.06	.25	-.04	-.12	-.29	-.30	.37	-.31	.21	.01	.22	.27	-.19	.29	-.14
125	.27	.15	.16	.31	-.40	-.28	.10	.21	.16	-.07	-.24	.13	-.07	.20	.05	.06	.20	-.21	-.28	.37	-.02	.05	-.04	.25	.05	.00	-.11	-.11	.14	.04	-.11	.18	-.09	-.01	-.26	-.15	.12	-.28	.02	-.08	.29	.02	-.03	.21	-.04
126	.10	.04	.00	-.08	-.13	-.24	.07	.17	.01	-.14	-.18	.07	-.05	.13	.08	-.06	.21	-.14	.01	.11	.12	.10	-.06	.17	.07	-.15	.09	-.06	-.04	.09	.00	-.06	.04	-.11	-.12	-.13	.06	-.01	.07	-.15	.10	.05	-.07	.11	.12
127	.01	.05	.11	.02	-.01	.01	.08	.00	.09	.04	.06	-.17	.12	.08	-.19	-.01	.07	.12	.09	-.05	-.07	.16	.05	.01	.18	.11	-.12	.06	-.06	-.11	.01	-.09	-.03	-.11	.04	-.17	.02	.00	.09	-.35	.03	.16	-.21	.18	-.18
128	-.01	.01	.26	-.15	.00	.27	.22	-.08	.14	-.08	.05	-.25	.24	-.09	.10	.05	.08	-.16	-.02	-.19	-.01	.03	-.07	-.10	.08	-.08	-.04	.15	-.22	-.11	.03	-.06	.06	-.16	-.05	-.13	.21	-.05	.24	-.11	-.01	.19	-.18	.15	-.08
129	-.19	-.11	-.33	-.14	.13	.04	-.24	-.23	-.30	-.04	-.01	.30	-.08	.02	-.16	-.07	-.24	.25	.05	.05	.23	.00	.01	-.06	-.12	.01	.10	.06	.12	.25	-.13	-.18	.09	.06	.16	.26	-.31	.34	-.05	-.28	-.19	-.13	.12	-.42	.19
130	-.10	-.04	.03	-.13	.06	.03	-.03	-.06	.04	.09	.07	-.26	.17	-.02	-.04	.04	.03	-.02	-.09	-.27	-.14	.04	.07	.01	.03	.09	-.01	-.10	-.23	-.23	-.08	-.11	-.23	-.13	.28	-.04	.01	-.01	.02	-.12	-.10	.02	.02	-.02	-.14
131	.10	.31	.70	.22	-.24	-.03	.72	.04	.54	-.20	-.12	-.27	.22	.03	.17	.11	.44	-.35	-.05	-.05	-.14	.05	.10	.24	.30	.23	-.06	.12	-.02	-.08	-.03	.27	-.11	-.18	-.38	-.31	.65	-.30	.42	-.04	.12	.58	-.41	.56	-.17
132	.18	.18	.51	.02	-.12	-.03	.46	.24	.36	-.23	-.20	-.22	.26	.23	.14	.05	.45	-.39	.07	-.13	-.11	.00	.12	.24	.18	-.11	-.05	.05	-.10	-.12	-.13	.24	-.07	-.13	-.27	-.31	.61	-.30	.42	.07	.20	.37	-.32	.36	-.16
133	.09	.08	-.30	.01	.10	-.20	-.44	.05	-.31	-.06	-.12	.23	-.20	-.07	-.15	-.14	-.13	-.01	.15	.09	.24	.03	-.02	-.14	-.18	-.07	-.04	-.08	.03	.19	.11	-.10	-.01	.09	-.02	.21	-.25	.05	-.16	-.09	.07	-.48	.31	-.40	.10
134	-.03	.07	.21	-.09	-.09	.00	.15	.06	.06	.03	.07	-.16	.22	-.11	.11	.19	.06	-.16	-.09	-.09	-.13	.01	.04	-.03	.10	-.30	-.12	.00	-.11	-.02	.09	-.03	-.02	.07	-.05	.04	.19	-.00	.18	-.08	-.03	.15	-.20	.16	.02
135	.15	.20	.57	.09	-.37	.09	.63	.28	.41	-.14	.12	-.22	.19	-.05	.28	.30	.37	-.15	-.18	-.01	-.28	-.13	.19	.37	.29	-.12	.11	-.03	.07	-.13	-.08	.18	-.14	-.12	-.18	-.19	.69	-.27	.23	.22	.16	.38	-.20	.45	-.19
136	.01	.20	.57	.08	-.08	.33	.48	.11	.33	-.12	.21	-.42	.44	.05	.39	.35	.23	-.17	-.12	-.26	.30	.03	.16	.09	.30	.16	.08	.23	-.15	-.23	-.09	.15	-.18	-.04	-.05	-.14	.65	-.15	.29	.36	.02	.37	-.29	.25	-.15
137	.05	.02	.28	-.11	-.04	.17	.20	.00	.39	.07	-.04	-.20	.23	-.03	.51	.40	.27	-.08	-.12	-.09	-.09	-.13	.14	.12	.16	.04	.25	-.05	-.00	-.09	.03	-.09	-.01	-.08	.12	-.06	.30	-.07	.20	-.07	.06	.26	-.13	.19	-.25
138	.07	.01	.21	-.20	.04	.34	.06	-.06	.21	.15	.11	-.38	.34	.03	.46	.39	.11	.00	-.02	-.19	-.19	-.11	.05	-.09	.20	.06	.15	.38	-.10	-.13	-.19	-.03	-.11	-.08	.11	.01	.21	-.01	.02	.21	-.07	.10	-.08	.01	-.10
139	.31	-.01	.06	.41	-.29	-.34	.05	.15	.14	-.03	-.15	.24	-.02	.19	.04	.09	.29	.01	-.09	.33	-.18	.17	-.02	.27	.09	.12	.00	.08	.11	-.13	-.05	.24	.15	-.08	-.19	-.24	.14	-.25	-.08	-.08	.32	.02	-.00	.18	-.15
140	.30	-.01	.11	.21	-.38	-.26	.09	.14	.11	-.08	-.08	.20	-.03	.12	.09	.28	.21	-.07	-.18	.23	-.21	.15	.05	.37	.04	.00	.00	-.04	.04	-.15	.04	.09	.06	.03	-.11	-.23	.18	-.33	-.09	-.04	.31	.05	-.09	.20	-.07
141	.12	.11	.26	.02	-.23	.09	.29	.24	.07	-.03	.06	-.11	.08	.11	.20	.27	.28	.06	-.15	.26	-.09	-.08	.08	.19	.04	-.20	.19	-.06	.04	-.03	-.01	.12	.01	-.00	-.09	-.19	.37	-.24	.20	.00	.13	.06	-.06	.21	-.23
142	.30	.02	.01	.42	-.24	-.30	.04	.17	.12	.21	-.11	.14	.04	.19	-.01	.07	.31	.11	-.13	.35	-.15	.27	.04	.28	.04	.10	-.04	-.03	.06	-.10	-.03	.15	.07	-.11	-.09	-.16	.03	-.16	-.16	-.07	.32	.02	.01	.25	-.14
143	.45	.02	.05	.42	-.30	-.37	.13	.14	.11	.10	-.08	.20	-.06	.08	-.06	.08	.37	-.03	-.09	.29	-.20	.15	.03	.31	.04	.05	-.08	.04	.04	-.13	-.13	.15	.09	-.11	-.18	-.16	.10	-.23	-.04	-.04	.46	.06	-.03	.31	-.16
144	.18	-.01	.10	.26	-.32	-.32	.11	.22	.22	-.02	-.19	.08	-.19	.05	.00	-.02	.18	-.20	-.14	.22	-.03	.10	-.04	.30	.09	.15	-.04	-.06	.02	-.06	-.04	.23	-.03	-.02	-.27	-.18	.15	-.21	-.11	-.20	.19	.12	-.06	.27	-.17
145	-.03	-.12	-.03	-.07	.04	.01	.17	-.20	-.03	.19	.14	.05	.10	-.12	-.08	-.19	.01	.02	.11	-.05	.05	-.05	.07	-.10	.05	.07	.01	-.01	.12	.06	.07	-.13	-.06	-.06	.02	.22	-.15	.08	.12	-.15	-.03	-.01	.01	.15	.12
146	.23	-.08	-.17	-.17	.56	.38	-.22	-.21	-.18	.22	.30	-.17	.08	.03	-.02	-.01	-.26	.29	.14	-.20	-.04	-.03	-.14	-.45	-.33	.04	.04	.09	-.16	-.10	.12	-.21	.01	.07	.34	.19	-.17	.40	-.04	.15	-.23	-.15	.05	-.21	.24
147	.36	.08	.40	.20	-.31	-.23	.47	.19	.33	-.06	.18	-.06	.01	-.16	.25	.24	.48	-.26	-.19	.03	-.25	-.02	.13	.34	.27	-.08	.12	-.08	-.03	-.17	-.02	.13	-.18	-.06	-.23	-.19	.49	-.29	.14	-.06	.36	.28	-.33	.45	-.17
148	-.14	.01	.09	-.21	.40	.39	-.15	-.12	-.10	.04	.29	-.25	.16	.06	-.08	.02	-.19	.18	.09	-.30	.06	.06	-.01	-.20	-.12	-.01	.04	.06	-.15	-.03	.14	-.23	-.16	.07	.37	.13	-.09	.49	-.09	.17	-.15	-.06	.11	-.19	.03
149	.09	.07	.21	.15	-.06	.05	.19	-.11	.17	-.17	-.05	-.09	.15	.03	.06	.07	.10	-.06	-.11	.10	-.12	-.03	.06	.15	.15	.09	-.14	.14	-.00	-.12	.01	-.02	-.15	-.18	-.05	.03	.20	.02	.15	.05	.09	.23	-.21	.11	-.12
150	.02	.28	.66	.00	-.07	.45	.45	.12	.38	-.08	-.07	-.54	.45	-.05	.26	.17	.07	-.27	-.21	-.15	-.29	-.03	.03	.00	.19	-.17	-.06	.04	-.14	-.20	-.07	.09	-.14	.04	-.20	-.15	.59	-.11	.23	.17	.03	.48	-.26	.31	-.11
151	.17	-.03	.02	.19	-.19	.34	.21	.16	-.01	-.09	-.03	.26	-.13	-.03	-.19	-.22	.27	.05	.02	.34	.20	-.02	-.02	.27	.17	-.10	-.15	.18	.24	.23	.12	.19	.09	.02	-.25	-.22	.09	-.22	.04	-.13	.17	.04	-.14	.20	-.03
152	.24	.01	.07	-.04	.14	.32	.16	-.20	.08	.18	.27	-.11	-.01	-.17	.12	.06	-.18	.05	-.07	-.13	-.01	.03	.15	-.05	.09	-.02	.17	.13	-.12	-.08	.06	-.13	-.09	-.05	.11	.16	-.09	.15	.03	.09	-.25	.07	-.07	-.00	.10
155	.12	.11	.50	.09	-.04	.11	.13	.00	.54	.11	-.08	-.31	.28	.13	.57	.29	.23	-.29	-.06	.00	-.23	.06	.12	.01	.14	.00	.12	.00	-.20	-.26	-.13	.11	-.13	-.08	-.07	-.02	.31	-.09	.23	.03	.14	.21	-.22	.20	-.19
159	.16	.02	.33	.16	-.01	-.14	.37	-.04	.49	.13	-.03	-.19	.14	.04	.18	.18	.35	.02	-.05	.07	-.21	.04	.12	.18	.14	.04	.04	-.02	-.09	-.21	-.03	.21	-.13	.00	-.04	-.29	.24	-.15	.23	-.04	.19	.37	-.21	.53	-.31
160	-.20	.03	-.19	-.20	-.03	.04	-.08	.01	-.30	-.08	-.16	.16	-.01	-.09	-.18	-.14	-.29	.02	.10	-.05	.19	-.03	.00	-.02	-.07	.03	.04	.00	.16	.20	.01	-.05	.04	-.00	.01	.30	-.11	.12	-.09	.09	-.21	.02	-.01	-.20	.22
161	.28	.29	.60	.18	-.55	-.19	.60	.37	.45	-.29	-.15	-.11	.06	.06	.30	.23	.46	-.41	-.22	.11	-.21	-.04	.05	.38	.24	-.07	.04	-.10	.07	-.12	-.10	.25	-.15	-.09	-.37	-.28	.65	-.49	.24	-.03	.29	.47	-.25	.48	-.25

62	63	64	65	66	67	68	80	85	86	88	89	90	91	92	93	94	
-.03	-.07	-.03	-.38	-.07	-.14	-.27	.09	-.19	.12	.01	.01	.04	-.17	.01	.06	.20	95
-.11	-.06	.01	-.09	.20	-.11	.21	-.05	-.02	.03	-.14	.32	-.04	.03	.02	-.09	.33	99
-.14	-.16	-.13	-.03	-.09	.02	-.04	-.00	.10	.04	.01	.08	-.14	.02	-.14	.01	.25	100
.02	.14	-.42	-.06	.10	-.01	-.06	.17	.02	-.21	.05	-.19	.10	-.14	.10	-.20	.51	101
-.10	-.12	-.01	.04	.13	.02	.20	-.03	.21	-.09	-.01	.04	-.08	-.04	-.13	-.11	.09	102
.13	.55	-.05	-.45	.40	-.14	.07	-.21	-.26	.10	-.28	.09	-.04	.14	.34	-.25	.29	103
-.07	-.39	-.17	.39	-.48	.21	.00	.21	.31	-.12	.40	-.09	-.13	-.11	-.16	.19	-.20	105
-.05	-.19	-.23	.41	-.22	.25	.14	.36	.29	-.25	.28	-.13	-.10	-.12	-.01	.06	-.05	106
-.24	-.14	-.18	.35	-.25	.18	-.09	.15	.21	-.13	.14	.04	-.05	-.19	-.19	.05	-.26	107
-.03	.24	.12	-.13	.20	-.04	.04	-.17	-.21	.10	-.26	.14	.09	.01	-.02	.08	.04	108
-.04	.33	.25	-.45	.19	-.16	-.21	-.15	-.11	.08	-.11	.08	.09	.12	.06	-.02	-.06	111
-.10	-.22	-.31	.25	-.44	-.05	.06	.16	.23	-.08	.32	-.23	-.08	-.15	-.05	.21	-.09	112
-.07	.01	-.09	-.23	.01	.04	-.27	.07	-.03	-.01	.11	-.10	-.03	.00	.05	-.04	.20	119
-.04	-.20	-.12	-.08	-.09	.06	-.20	.16	.05	-.06	.05	-.19	.04	-.15	.00	.08	.21	120
.10	-.08	.05	-.25	-.01	.02	-.10	.06	-.00	.07	-.01	-.06	-.02	-.03	.08	-.09	.33	121
-.12	-.16	-.18	-.07	-.22	.06	-.22	.19	.06	.04	.20	-.24	-.06	-.14	.04	-.04	.26	122
-.11	-.14	-.36	.16	-.25	.12	-.25	.21	.20	-.13	.24	-.10	-.15	-.14	.05	.01	.08	123
-.12	-.29	-.30	.37	-.31	.21	.01	.22	.27	-.19	.29	-.14	-.28	-.17	-.21	-.11	-.03	124
-.01	-.26	-.15	.12	-.28	.02	-.08	.29	.02	-.03	.21	-.04	-.07	-.22	-.05	.06	.10	125
-.11	-.12	-.13	.06	-.01	.07	-.15	.10	.05	-.07	.11	.12	-.17	-.28	-.21	.01	-.02	126
-.11	.04	-.17	.02	.00	.09	-.35	.03	.16	-.21	.18	-.18	-.11	.13	.09	-.15	-.06	127
-.16	-.05	-.13	.21	-.05	.24	-.11	-.01	.19	-.18	.15	-.08	-.13	-.03	-.13	-.05	-.04	128
.06	.16	.26	-.31	.34	-.05	-.28	-.19	-.13	.12	-.42	.19	.14	.08	.02	-.03	.01	129
-.13	.28	-.04	.01	-.01	.02	-.12	-.10	.02	.02	-.02	-.14	-.06	.09	-.03	-.11	.14	130
-.18	-.38	-.31	.65	-.30	.42	-.04	.12	.58	-.41	.56	-.17	-.15	-.15	-.16	-.05	-.25	131
-.13	-.27	-.31	.61	-.30	.42	.07	.20	.37	-.32	.36	-.16	-.23	-.15	-.19	-.02	-.07	132
.09	-.02	.21	-.25	.05	-.16	-.09	.07	-.48	.31	-.40	.10	-.04	.15	.13	.05	.15	133
.07	-.05	.04	.19	-.00	.18	-.08	-.03	.15	-.20	.16	.02	-.18	-.21	-.14	-.06	-.05	134
-.12	-.18	-.19	.69	-.27	.23	.22	.16	.38	-.20	.45	-.19	-.20	-.18	-.23	.11	-.56	135
-.04	-.05	-.14	.65	-.15	.29	.36	.02	.37	-.29	.25	-.15	-.05	-.05	-.19	.05	-.27	136
-.08	.12	-.06	.30	-.07	.20	-.07	.06	.26	-.13	.19	-.25	-.15	-.06	-.13	-.02	-.13	137
-.08	.11	.01	.21	-.01	.02	.21	-.07	.10	-.08	.01	-.10	.16	-.03	-.15	.09	-.01	138
-.08	-.19	-.24	.14	-.25	-.08	-.08	.32	.02	-.00	.18	-.15	-.06	-.12	.02	.02	-.09	139
.03	-.11	-.23	.18	-.33	-.09	-.04	.31	.05	-.09	.20	-.07	-.10	-.07	.03	.07	-.11	140
-.00	-.09	-.19	.37	-.24	.20	.00	.13	.06	-.06	.21	-.23	-.04	-.03	.04	.19	-.25	141
-.11	-.09	-.16	.03	-.16	-.16	-.07	.32	.02	.01	.25	-.14	.10	-.13	.05	-.03	-.03	142
-.11	-.18	-.16	.10	-.23	-.04	-.04	.46	.06	-.03	.31	-.16	.03	.01	.15	.09	-.04	143
-.02	-.27	-.18	.15	-.21	-.11	-.20	.19	.12	-.06	.27	-.17	-.17	-.15	.03	.05	.03	144
-.06	.02	.22	-.15	.08	.12	-.15	-.03	-.01	.01	.15	.12	.18	.04	-.01	-.05	-.18	145
.07	.34	.19	-.17	.40	-.04	.15	-.23	-.15	.05	-.21	.24	.07	.21	.09	.07	.06	146
-.06	-.23	-.19	.49	-.29	.14	-.06	.36	.28	-.33	.45	-.17	-.16	-.17	-.02	-.08	-.25	147
.07	.37	.13	-.09	.49	-.09	.17	-.15	-.06	.11	-.19	.03	.02	.12	.07	-.08	.09	148
-.18	-.05	.03	.20	.02	.15	.05	.09	.23	-.21	.11	-.12	.00	.07	-.11	.04	.05	149
.04	-.20	-.15	.59	-.11	.23	.17	.03	.48	-.26	.31	-.11	.08	-.12	-.15	-.04	-.12	150
.02	-.25	-.22	.09	-.22	.04	-.13	.17	.04	-.14	.20	-.03	-.23	-.02	.02	-.04	-.13	151
-.05	.11	.16	-.09	.15	.03	.09	-.25	.07	-.07	-.00	.10	-.02	.02	-.08	.11	-.12	152
-.08	-.07	-.02	.31	-.09	.23	.03	.14	.21	-.22	.20	-.19	-.06	-.12	-.01	-.11	.18	155
.00	-.04	-.29	.24	-.15	.23	-.04	.19	.37	-.21	.53	-.31	-.16	-.02	.02	-.20	-.03	159
-.00	.01	.30	-.11	.12	-.09	.09	-.21	.02	-.01	-.20	.22	.28	.01	-.35	.17	-.22	160
-.09	-.37	-.28	.65	-.49	.24	-.03	.29	.47	-.25	.48	-.25	-.20	-.27	-.26	.19	-.29	161

VAR.	95	99	100	101	102	103	105	106	107	108	111	112	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
95	1.00																																											
99	-.08	1.00																																									
100	.38	.24	1.00																																								
101	.35	.08	.24	1.00																																						
102	-.08	.67	.34	-.01	1.00																																				
103	-.12	.16	-.13	.20	.06	1.00																																		
105	.19	-.17	.15	-.06	-.03	-.61	1.00																																
106	-.22	-.10	-.04	.10	-.08	-.22	.25	1.00																														
107	-.05	-.12	-.03	-.05	-.19	-.42	.23	.31	1.00																													
108	-.13	.11	-.13	.06	-.07	.28	-.31	-.04	.06	1.00																												
111	.12	.04	-.12	-.18	-.05	.19	-.08	-.28	-.25	.07	1.00																											
112	.28	-.04	.17	.09	.06	-.36	.55	.21	.07	-.27	.14	1.00																										
119	.56	-.03	.16	.31	-.02	-.14	.17	-.02	.02	-.07	.11	.15	1.00																									
120	.53	.03	.29	.33	.08	-.30	.27	.03	.09	-.11	-.08	.21	.62	1.00																								
121	.52	.15	.38	.19	.15	-.01	.11	-.12	-.17	-.04	.12	.21	.51	.57	1.00																							
122	.59	-.05	.30	.38	-.04	-.28	.36	-.01	.08	-.16	.00	.29	.52	.64	.50	1.00																						
123	.27	-.02	.22	.14	.07	-.26	.39	.04	.17	-.15	-.06	.24	.20	.40	.21	.51	1.00																					
124	.03	.08	.32	.07	.20	-.34	.40	.24	.36	-.21	-.30	.21	.10	.22	.17	.32	.41	1.00																				
125	.52	-.03	.30	.31	-.01	-.41	.47	.09	.20	-.13	-.25	.32	.38	.60	.40	.60	.51	.37	1.00																			
126	.32	-.10	.15	.18	.01	-.18	.22	.02	.09	-.01	-.22	.15	.13	.18	.09	.29	.26	.27	.37	1.00																		
127	-.06	-.05	.02	.09	.07	-.02	.01	-.02	.07	-.08	.01	-.13	.16	.06	-.08	.10	.12	-.01	-.10	.05	1.00																	
128	-.25	-.07	-.06	.00	.02	-.03	.08	.13	.12	.05	-.14	-.14	.13	.10	-.07	.00	.02	.16	-.18	.12	.27	1.00																
129	.04	.07	-.12	-.13	.09	.17	-.32	-.05	.01	.25	.14	-.26	.07	.09	.14	-.16	-.11	-.25	-.07	-.02	.10	-.10	1.00															
130	-.18	-.07	-.08	.03	-.01	.19	-.08	-.06	.04	.03	.18	-.05	-.17	-.08	-.10	.12	.06	-.08	-.21	-.05	.22	.11	-.01	1.00														
131	-.15	-.15	.04	.03	.00	-.38	.52	.40	.33	-.18	-.22	.28	-.01	.09	-.04	.20	.49	.50	.27	.15	.14	.29	-.28	-.00	1.00													
132	-.27	-.02	.12	.08	.10	-.32	.41	.46	.41	-.16	-.39	.16	-.02	.08	.02	.14	.32	.76	.24	.25	.07	.31	-.27	.06	.65	1.00												
133	.19	-.06	-.03	-.20	-.10	.11	-.11	-.26	-.09	.02	.05	-.16	-.03	.07	.11	.03	.06	-.10	.22	.04	-.13	-.28	.23	-.09	-.25	-.21	1.00											
134	-.14	-.02	.05	.08	.02	-.07	.07	.04	-.02	.03	-.12	-.10	-.18	-.09	-.26	.01	.13	.12	.10	.33	.19	.17	-.19	-.04	.19	.15	.02	1.00										
135	-.30	-.13	-.12	-.19	-.01	-.46	.48	.41	.39	-.06	-.15	.35	-.17	-.11	-.27	-.07	.13	.33	.17	.07	-.05	.05	-.25	-.02	.55	.46	-.29	.19	1.00									
136	-.75	-.03	-.23	-.13	.03	-.12	.15	.33	.22	.10	-.25	.05	-.41	-.33	-.49	-.36	-.09	.16	-.20	-.16	-.06	.34	-.30	.09	.44	.46	-.30	.21	.56	1.00								
137	-.25	-.12	-.02	-.14	-.01	-.16	.12	.13	.24	-.01	-.07	.06	-.06	-.05	-.10	-.10	.11	.12	.02	.02	-.08	-.02	-.01	.21	.17	.24	-.04	.03	.39	.31	1.00							
138	-.51	-.01	-.17	.04	-.07	.06	-.14	.05	.06	.27	-.09	-.13	-.25	-.17	-.37	-.29	-.15	-.05	-.18	-.14	-.12	.22	-.21	.11	.10	.13	-.21	.11	.21	.65	.39	1.00						
139	.22	-.04	.15	.12	.08	-.36	.33	.12	.16	-.20	-.13	.39	.17	.28	.08	.27	.22	.27	.42	.25	.01	-.13	-.17	-.17	.13	.17	-.05	-.05	.24	-.05	.10	-.08	1.00					
140	.24	-.15	.12	.08	-.05	-.33	.39	.07	.12	-.30	-.09	.34	.09	.18	-.00	.19	.17	.30	.39	.24	.05	-.08	-.19	-.06	.12	.08	-.03	.15	.29	.02	-.01	-.09	.41	1.00				
141	.03	-.17	.03	-.03	-.09	-.35	.33	.11	.23	.10	-.18	.22	-.07	.12	-.06	.07	.23	.19	.22	.10	-.00	.00	-.03	-.02	.20	.19	-.06	.00	.45	.14	.27	-.02	.24	.21	1.00			
142	.30	-.02	.20	.06	.08	-.30	.26	.02	.18	-.21	-.08	.26	.13	.25	.12	.28	.20	.24	.34	.10	.02	-.11	-.18	-.00	.06	.08	-.06	-.10	.16	-.09	.15	.01	.60	.42	.16	1.00		
143	.23	-.07	.15	.04	.04	-.33	.33	.27	.14	-.27	-.01	.35	.19	.26	.16	.35	.25	.30	.37	.07	-.01	-.10	-.23	-.03	.19	.22	-.07	-.02	.27	-.06	.01	-.04	.51	.45	.13	.71	1.00	
144	.31	-.02	.19	.07	.03	-.37	.28	-.01	.12	-.21	-.18	.38	.22	.26	.18	.41	.33	.33	.40	.21	.08	-.19	-.12	.03	.08	.15	-.05	.00	.15	-.16	.05	-.22	.35	.38	.19	.25	.30	1.00						
145	.07	-.11	-.13	-.08	-.09	-.03	.04	-.10	-.03	-.02	.11	-.17	.08	-.04	-.08	-.03	-.09	-.17	-.03	.07	.03	-.05	.02	-.04	-.03	-.10	-.07	-.01	-.08	-.17	-.11	-.14	-.03	-.25	-.01	-.10	-.11	-.04	1.00					
146	-.28	.08	-.14	-.13	.02	.39	-.39	-.12	-.14	.15	.09	-.49	-.21	-.26	-.21	-.42	-.31	-.34	-.39	-.20	-.04	.05	.06	.04	-.26	-.21	.03	-.01	-.19	.06	-.03	.16	-.33	-.28	-.02	-.21	-.28	-.46	.03	1.00				
147	-.12	-.01	-.14	-.02	.08	-.26	.36	.38	.18	-.16	-.16	.32	-.04	-.07	-.19	.05	.14	.25	.11	.08	.09	.17	-.18	.06	.38	.33	-.13	.18	.48	.33	.19	.01	.21	.25	.18	.11	.23	.30	.02	-.37	1.00			
148	-.40	.17	-.16	-.20	.11	.37	-.38	-.10	-.15	.08	.13	-.37	-.26	-.24	-.13	-.37	-.26	-.25	-.39	-.24	.03	.03	.16	.21	-.20	-.09	.08	.00	-.06	.20	.18	.24	-.31	-.30	-.17	-.21	-.26	-.33	-.07	.52	-.30	1.00		
149	-.12	.17	.12	.09	.22	-.10	.03	.21	.09	-.17	-.09	.15	.06	.05	.02	-.03	-.03	.13	.14	.04	-.03	.12	.01	.07	.22	.23	-.11	.13	.17	.26	.12	.15	.01	.04	-.12	.02	.11	.04	-.09	.01	.11	.24	1.00	
150	-.40	-.05	.04	.09	-.03	-.13	.17	.14	.16	-.08	-.42	-.09	-.24	-.09	-.21	-.07	.01	.22	.03	-.05	.02	.26	-.39	.08	.42	.41	-.33	.23	.34	.56	.21	.39	-.06	-.01	.10	-.05	-.07	-.03	-.10	.05	.13	.15	.16	1.00
151	.30	-.09	.10	.06	.07	-.29	.25	.13	.21	-.03	-.02	.26	.22	.22	.12	.25	.29	.33	.29	.30	.05	-.09	.04	-.16	.22	.14	.03	.05	.13	-.21	-.11	-.30	.19	.17	.18	.20	.27	.25	.19	-.33	.27	-.40	.01	-.28
152	-.23	.08	-.13	-.22	.08	.13	-.19	.05	-.08	.22	.14	-.16	-.07	-.11	-.16	-.28	-.05	-.22	-.15	-.20	-.08	.08	.17	.02	-.02	-.14	-.12	-.01	.03	.19	.12	.21	-.23	-.20	-.20	-.15	-.12	-.23	.12	.20	-.00	.17	.04	-.02
155	-.16	-.02	.12	.27	.01	-.16	.14	.24	.13	-.12	-.35	-.13	-.01	.18	-.05	.12	.15	.27	.18	.07	.04	.16	-.40	.11	.28	.39	-.18	.18	.14	.33	.35	.33	.09	.07	.06	.09	.08	.03	-.15	.05	.14	.03	.15	.46
159	.02	-.03	.08	.21	.07	-.09	.20	.24	.00	-.19	-.19	.12	.10	.15	.12	.30	.29	.28	.20	.10	.19	.02	-.28	.13	.39	.27	-.29	.11	.21	.12	.16	-.02	.20	.19	.17	.21	.25	.22	.02	-.08	.29	-.15	.07	.16
160	-.09	.12	.04	-.20	.20	-.11	-.13	-.18	.02	.17	.14	-.06	-.09	-.09	-.03	-.15	-.14	-.16	-.17	-.03	.03	-.02	.31	-.06	-.15	-.21	.03	-.03	-.09	-.01	-.15	-.03	-.16	-.12	-.08	.18	-.15	-.17	.01	.11	-.26	.03	.06	-.09
161	-.00	-.17	.08	-.01	-.05	-.66	.71	.37	.45	-.18	-.20	.58	-.00	.17	-.03	.28	.43	.51	.46	.27	-.03	.05	-.35	-.05	.61	.54	-.16	.22	.73	.39	.29	.02	.39	.43	.43	.28	.35	.39	-.13	-.45	.46	-.38	.14	.29

TABLE 5.8

ABILITY AND NEED VARIABLES HAVING INTERCORRELATION = ± .70 FOR ALL DISTRICTS, WITH COMPARISON OF CORRESPONDING INTERCORRELATION FOR FIVE CLASSES OF SCHOOL DISTRICT

Inter-correlation of Variables	Classes of District					
	All Districts	Medium City	Small City	Established Suburb	Developing Suburb	Agricultura Service Cen
1 and 80	.998	.984	.761	.992	.948	.881
4 - 16	.780	.775	.684	.950	.787	.621
124 - 132	.759	.661	.732	.559	.210	.903
135 - 161	.726	.385	.422	.868	.890	.482
16 - 131	.715	.259	.340	.891	.682	.405
4 - 65	.710	.552	.493	.372	.749	.092
142 - 143	.707	.706	*	*	*	*
105 - 161	.706	.152	.611	.804	.701	.280
95 - 136	-.752	-.394	-.675	-.744	-.860	-.742

*No data for these variables in this district category.

Perhaps the most striking feature of the data presented in Tables 5.2, 5.4, and 5.8 is the lack of similarity between correlations of variables for the total sample and correlations of the same variables for the five classes of district. Only in the case of variables related to population size and/or resident enrollment, and variables expressing the same data on different bases, were consistently similar correlations found for the total sample and the five classes of district. It would appear that substantial differences exist among school districts which are masked or distorted when data for all school districts are employed in statistical treatment. Consequently, if state support programs are to treat all school districts equitably, the differences among districts must be given specific consideration. State support programs which are based primarily on the similarities of school districts are destined to result in inequities.

Factor Analysis

Interrelationships among 48 variables related to ability to support education were studied through the use of factor analysis, as were interrelationships among 62 variables related to need for educational services. Finally, interrelationships among a combination of 70 variables--26 relating to ability to support education and 44 relating to need for educational services--were investigated. It was hoped that a parsimonious representation of the complex of variables which would provide a relatively simple configuration of the data could be obtained through factor analysis. This hope was only partially realized, since in no case did the number of eigenvalues > 1.0 prove to be less than two-thirds the number of variables on which the factor analysis was based. Furthermore, no factor was extracted in any of the three analyses which accounted for more than 13 percent of the total variance of the sample, and only two factors accounting for as much as 10 percent of the total variance were extracted.

The IMAGE program, developed by Chester W. Harris and Walter A. Stolz for the CDC 1604 computer, was employed.[1] The communality solution, employing squared multiple correlations as the initial estimates of communality, was specified. The basic method used is to form the matrix $S^{-1} RS^{-1}$ and obtain the characteristic vectors and roots of the matrix, from which the factors of the matrix are generated. The number of "Harris factors" extracted by the IMAGE program corresponds to Guttman's best lower bound on the number of common factors. Rotation of the factor matrix is accomplished by a normal varimax trailer in the program. The program will accommodate a maximum of 70 variables and print means, standard deviations, and correlation coefficients (if raw data are used); the determinant of the correlation matrix and the S-squared diagonal terms; eigenvalues and eigenvectors, the factor matrix and rotated factor matrix; the number of factors rotated, the number of iteration cycles and the successive variances for each cycle; the check on communalities; and the percent of total and common variance accounted for by each factor.

To assist in interpretation of the factor analysis, three categories of factors based on the number of variables having $r \geq \pm .40$ with each factor were arbitrarily established. Factors which correlated with two or more variables at this level were considered general factors; factors which correlated with one variable at this level were considered specific factors; and factors with which no variable correlated at $\pm .40$ were considered to have been destroyed by rotation of the factor matrix. It should be kept in mind that $r \geq \pm .163$ is statistically significant at the .05 level; $r \geq \pm .228$ is statistically significant at the .02 level; and $r \geq \pm .252$ is statistically significant at the .01 level for a sample of the size under study.

Factor Analysis of Ability Variables

Of the original 76 variables arbitrarily categorized as variables related to ability to support education, a total of 28 were discarded for reasons discussed in the preceding section. The remaining 48 variables were subjected to factor analysis. Thirty-two factors (corresponding with 32 eigenvalues ≥ 1.0) were extracted. They accounted for 78.96 percent of the total variance associated with the 48 variables. The matrix of correlations between each factor and all variables is displayed in Table 5.9.

General Factors

Twelve general factors, i.e., factors having $r \geq \pm .40$ with two or more variables, were identified. These 12 factors accounted for 52.78 percent of the total variance associated with the 48 variables and 66.84 percent of the common variance, i.e., the variance accounted for by the 32 factors.

Factor A-1. -- This factor is highly correlated with personal income. It accounts for nearly 13 percent of the total variance and over 16 percent of the common variance. The following variables correlate significantly with Factor A-1:

	Variable	Correlation
16	Net reported personal income tax per capita	.927
14	Effective buying income per capita	.853

TABLE 5.9
ROTATED FACTOR MATRIX OF 48 VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION IN 104 WISCONSIN SCHOOL DISTRICTS

FACTORS

VAR.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	
1	.069	.207	-.043	-.002	.016	-.023	.053	.069	.030	-.003	-.063	-.009	.742	-.079	.067	-.021	-.152	.117	-.010	.020	-.086	-.018	-.036	.141	.035	-.015	.065	-.030	-.017	-.005	-.020	.030	1
2	.246	-.057	-.143	-.015	.020	-.874	.022	.005	-.041	-.021	-.052	-.040	-.016	-.020	.047	-.086	-.020	-.011	-.026	-.009	.078	.026	-.043	-.030	.046	.014	-.008	.010	.025	-.012	-.023	-.008	2
3	.355	.090	-.440	.046	.055	-.343	-.194	.011	.016	-.029	-.045	.020	.000	.180	.023	.037	-.119	.055	-.004	-.189	.054	.401	-.028	-.241	.038	.031	-.099	.038	-.011	-.003	.002	-.018	3
4	.840	-.079	-.002	.036	-.021	-.326	.095	.114	.015	-.013	-.203	.017	-.004	.158	.091	-.044	-.042	.028	-.058	.043	-.026	.025	-.082	-.024	.169	.050	-.055	-.076	-.043	.038	-.048	-.045	4
5	.213	.216	.130	-.030	.043	-.101	.044	-.027	.232	.078	.118	-.105	.063	-.265	.016	.041	-.480	.369	.037	.021	-.028	.017	-.107	.167	.019	.016	-.144	-.045	-.056	.022	-.207	.010	5
6	.081	.059	-.866	-.031	-.061	-.028	-.064	.044	-.080	.087	.007	-.147	.012	.075	.095	.054	-.038	-.058	-.070	-.289	.030	.064	.069	.006	-.021	-.070	.048	-.052	-.025	-.044	.056	.019	6
7	-.239	-.087	.221	.073	.666	-.008	-.148	-.060	-.024	-.022	.121	-.009	-.060	.094	-.233	-.047	.126	-.225	.072	-.099	-.095	.012	.269	-.179	-.092	-.006	-.037	.006	.064	.000	-.004	-.002	7
12	.144	-.190	-.009	.019	.020	.024	.066	-.041	.033	-.058	-.098	.070	-.219	.704	-.035	-.096	.154	-.108	-.043	-.145	-.062	.010	-.068	-.102	-.039	.047	-.049	.027	.066	.007	.021	-.015	12
14	.853	-.015	.032	-.001	-.077	-.022	.126	.147	-.144	-.024	-.169	.044	.140	-.150	.077	.013	-.026	.045	-.047	-.008	-.198	-.018	-.087	.048	.123	-.033	.045	-.012	.013	.052	-.016	-.044	14
16	.927	-.120	.054	.016	-.150	-.011	.031	.123	.068	-.021	.071	-.054	.057	.024	-.006	.018	.038	-.005	-.033	.000	.029	.043	-.061	.042	-.093	.037	.092	.038	-.017	-.024	.034	.047	16
17	.163	.022	-.886	-.041	-.056	-.132	.026	.062	-.083	.067	.010	-.091	.062	-.046	-.064	.064	-.012	.010	-.089	-.044	-.091	-.052	-.115	.072	.068	.024	.038	.041	-.030	.042	-.048	-.019	17
18	-.034	.169	.191	-.174	-.143	-.051	.029	.018	-.021	.192	.058	-.082	.013	-.408	-.105	-.174	-.391	.136	-.001	-.040	-.197	-.132	-.169	.090	-.010	.011	-.078	.057	.067	.009	.084	-.037	18
27	.619	-.188	.078	.069	-.051	.080	.025	.053	-.151	-.020	-.302	.018	-.043	-.096	.024	-.059	-.106	.151	.230	-.079	-.157	-.100	.023	.096	.066	-.061	-.085	-.291	.105	-.002	-.006	.019	27
28	-.136	.077	-.065	-.108	-.105	-.433	.063	-.056	-.269	-.046	.083	-.059	.093	-.125	.007	-.182	-.418	.000	-.003	.198	.113	.073	-.061	.052	-.166	-.035	-.015	-.030	-.118	.065	.133	.053	28
29	-.158	-.057	.020	.147	.089	.053	-.012	-.021	.010	.030	-.155	.028	-.084	.014	-.735	-.076	-.119	.046	.028	.013	.115	-.004	.024	.027	-.042	.001	-.021	.001	.029	.000	.001	.003	29
32	-.046	-.093	.120	-.005	-.018	.072	.070	-.050	.850	.025	-.046	.021	.063	.009	-.006	.057	.063	.173	-.048	-.045	.025	.002	-.103	-.064	-.081	-.028	-.005	.008	.033	.001	.003	.002	32
33	-.305	.823	.072	-.095	-.091	.055	-.050	.016	-.043	-.058	.069	-.112	.130	-.165	.033	.048	-.081	.053	.062	.019	.088	-.028	.062	.067	-.102	.042	.028	.092	.073	-.008	.025	.036	33
34	.128	-.235	.303	.020	-.002	.067	.144	-.061	.033	-.062	-.041	.756	.013	.088	-.039	-.082	.090	.114	-.027	-.082	.054	.010	-.079	-.148	.024	-.003	-.002	-.001	.010	.000	.001	-.002	34
35	.726	.236	-.240	-.025	.229	-.048	.059	.110	.268	.008	-.161	.122	.045	.148	.083	.019	-.041	-.151	-.109	-.138	-.090	.100	-.069	-.079	.090	-.003	-.084	-.081	-.027	.032	-.042	-.028	35
36	.038	.852	-.161	-.146	.034	.004	-.015	.066	-.084	.098	.066	-.100	.120	-.066	.045	-.019	-.278	-.003	.001	.002	.015	.038	-.003	.106	.105	-.018	-.010	-.074	-.062	.011	-.026	-.038	36
38	.827	-.121	-.375	-.010	-.140	-.067	.002	.124	.053	.009	.109	-.071	.088	.006	-.050	.056	.017	-.039	-.057	-.010	.003	-.006	-.073	.083	-.101	.003	.111	.117	-.021	-.015	.024	.061	38
39	.258	.007	.022	.053	-.017	-.041	.041	-.005	.019	-.017	-.793	.014	.017	.083	-.097	.037	.028	-.086	.002	.003	.119	-.127	-.004	-.033	.145	-.032	-.023	-.034	-.129	.019	.012	-.021	39
40	.031	.012	.007	-.030	-.124	-.008	.220	.097	.077	.041	-.698	.114	.120	.027	-.008	.039	.115	.071	-.119	.021	-.114	.200	-.081	-.007	-.117	.090	-.007	-.030	.102	.033	-.030	.051	40
41	.359	-.012	.026	.051	-.090	.020	.050	.102	.104	.045	-.219	.054	.556	-.360	.026	-.057	.037	-.016	-.147	.046	.089	.071	.015	.095	-.012	.034	-.079	.094	.023	.018	.049	-.088	41
42	-.429	-.008	.089	-.034	.103	.055	.018	.154	.201	-.011	-.001	-.041	-.091	.062	-.104	-.083	-.109	.057	.055	-.149	-.137	-.001	-.026	.044	-.536	-.038	-.039	.014	.028	-.002	.002	-.002	42
43	-.138	.033	.108	.055	.070	.047	-.039	-.003	-.094	-.051	.002	-.047	-.029	-.032	-.010	-.054	.063	-.023	-.055	.024	-.017	-.004	.652	.000	.015	-.010	-.021	.002	.026	-.002	.002	-.001	43
44	.000	.190	-.087	-.072	-.033	-.010	-.121	.050	-.068	.012	-.004	-.025	.111	-.060	-.111	-.016	-.739	.063	-.023	.033	-.023	.030	-.039	.086	-.024	-.023	.065	.000	.008	-.014	.003	-.006	44
45	-.166	.041	-.043	-.059	.059	.024	-.841	-.012	-.079	-.003	.139	-.101	-.086	-.039	-.022	-.110	-.098	.045	-.070	.068	.135	.019	.056	-.035	.005	.030	-.033	.004	.012	.003	-.007	-.003	45
47	-.103	.019	.023	.108	-.097	.015	-.044	.017	.153	.091	.031	.087	.102	-.083	-.045	.061	-.105	.818	.017	.019	.008	.006	-.027	-.047	-.027	-.027	.022	-.003	-.001	.000	.011	.001	47
49	.088	-.079	-.003	-.008	-.008	.011	.024	.832	-.033	-.013	-.069	.028	.012	.053	-.035	-.039	.042	-.017	.059	.026	-.036	.052	.081	-.049	-.022	.160	-.046	.012	.046	-.074	-.007	.008	49
50	.249	.179	-.135	-.071	-.042	.010	-.025	.727	-.020	.060	-.059	-.045	.139	-.270	.069	.083	-.054	.057	.035	-.060	-.084	-.003	-.120	.085	-.052	-.084	.239	.064	.009	.059	-.032	.045	50
51	.317	.084	-.043	.026	.002	-.023	.009	.772	-.003	-.019	-.054	-.064	.050	.035	.039	-.235	-.080	.007	.024	.040	-.039	-.066	-.059	-.001	-.003	-.103	-.048	-.069	-.106	.066	.032	-.048	51
52	-.120	.040	.115	-.044	.026	.023	.073	.081	-.038	-.017	.095	-.014	-.057	-.018	-.023	.024	.017	.015	.786	.034	-.023	-.001	-.064	-.019	-.022	-.022	-.015	-.006	-.018	.000	-.001	.001	52
53	-.003	-.027	-.050	.128	.176	-.021	-.090	.285	-.049	-.079	-.559	-.191	.101	-.049	-.226	.198	-.024	-.068	-.116	.031	.159	-.035	.133	-.001	-.124	-.141	.111	.152	.023	-.130	.028	-.058	53
54	.022	-.021	.082	.101	.019	-.090	-.083	.122	-.051	.013	.046	.048	.029	.035	-.061	-.690	-.041	-.056	-.025	-.010	-.047	-.001	.068	-.045	-.027	-.003	-.001	-.002	.016	-.002	.001	-.002	54
55	.015	.093	-.013	-.893	-.063	-.005	.014	-.012	.001	-.077	.056	-.055	-.014	-.026	.099	.080	-.028	-.095	.180	-.004	.008	.033	-.066	-.036	-.095	-.054	-.026	-.015	-.014	-.019	.022	.009	55
56	-.129	.039	-.002	-.762	.038	.034	-.523	.008	.025	.032	.091	-.036	-.028	-.006	.026	.004	-.009	-.015	-.139	.033	.103	.006	.019	-.080	.003	-.003	-.012	-.013	-.022	-.018	.039	.023	56
57	.068	.130	-.040	-.001	-.074	.027	.038	-.011	-.065	.083	.033	-.099	.183	-.090	-.029	.051	-.130	-.035	-.026	-.002	-.060	-.021	-.020	.635	-.017	-.057	.028	-.003	-.042	.000	-.001	-.001	57
58	.242	.034	-.228	-.231	-.061	.068	.143	.106	-.018	.076	-.013	.003	.443	-.052	.072	.001	-.087	.043	-.074	.050	-.162	-.040	-.123	.125	.065	-.036	.490	.012	-.047	-.007	.009	.000	58
59	.008	.124	-.070	-.739	.005	-.079	.146	.046	-.028	.335	-.060	.098	.077	-.022	.069	.072	-.166	-.013	-.069	.042	-.065	-.069	-.042	.158	.136	.093	.159	.044	.041	.053	-.078	-.040	59
61	.050	.130	-.148	-.096	.030	.056	.051	.031	-.093	.773	-.092	.071	.038	-.080	.043	.019	-.151	-.030	-.003	.112	.077	-.033	-.052	.212	.086	-.018	.120	.072	-.021	.017	-.098	-.063	61
62	-.109	-.068	-.004	.012	-.035	-.006	-.034	-.026	.101	.809	.083	-.103	-.006	-.018	-.063	-.034	.075	.125	-.016	-.020	.094	.025	-.032	-.065	-.062	.001	-.073	-.056	.001	-.013	.072	.049	62
63	-.460	-.162	.278	.135	-.125	.050	.017	-.113	.254	-.006	-.048	.243	-.046	.023	-.102	.119	.256	.037	.066	-.068	-.202	-.081	.007	-.211	-.238	-.007	.029	-.084	.150	.020	.015	.194	63
64	-.177	.076	.054	-.028	-.049	-.106	-.157	-.108	.016	.036	-.072	-.047	-.146	-.009	-.126	.063	.031	.011	-.029	-.030	.696	.003	-.016	-.071	.061	.025	-.044	.007	.027	-.001	.004	-.001	64
65	.747	-.031	-.280	.021	.180	-.025	.104	.112	-.077	-.059	-.095	.241	.082	.065	.135	.096	.026	-.138	-.028	.004	-.120	.022	-.041	.061	.047	.025	.020	.050	-.054	-.072	-.011	-.017	65
66	-.260	.022	.213	.003	.126	-.016	-.022	-.080	.170	-.052	.115	.027	-.061	.170	-.135	-.074	.043	-.033	-.086	-.020	.108	.000	.344	-.227	-.055	-.062	-.048	-.016	.426	-.001	.004	.004	66
67	.495	.056	.114	.012	-.011	-.023	-.094	.142	-.099	-.031	.033	-.007	-.028	.101	.003	.017	.069	-.092	-.098	.047	.086	-.008	-.065	-.261	.055	.467	-.033	.008	-.050	.002	-.001	-.002	67
68	.006	-.019	-.329	.039	.046	.015	.076	-.031	.057	-.071	.030	.065	-.045	.101	.010	-.016	.063	-.021	-.038	-.717	.029	.016	-.027	.000	-.064	-.013	-.014	-.004	.006	.002	.000	.002	68
Variance	6.223	1.969	2.681	2.186	.781	1.286	1.309	2.157	1.246	1.504	1.881	.928	1.371	1.232	.846	.780	1.534	1.099	.876	.811	.919	.305	.833	.943	.612	.340	.472	.204	.319	.057	.112	.085	Variance
% of Tot. V	12.964	4.102	5.584	4.555	1.627	2.680	2.728	4.494	2.597	3.134	3.919	1.933	2.856	2.566	1.762	1.626	3.196	2.289	1.824	1.690	1.914	.635	1.735	1.965	1.276	.708	.983	.425	.665	.118	.233	.177	% of Tot. V
% of Com V	16.418	5.194	7.073	5.769	2.061	3.394	3.455	5.691	3.289	3.969	4.964	2.448	3.616	3.250	2.231	2.059	4.048	2.899	2.310	2.140	2.424	.804	2.197	2.489	1.616	.896	1.245	.538	.842	.150	.295	.226	% of Com V

4	Equalized valuation of residential property per capita	.840
38	Municipal revenue per capita from all other tax sources	.827
65	Receipts per pupil from local tax sources	.747
35	Receipts per capita from general property tax	.726
27	Median years of school completed by population age 25 and over	.619
67	Receipts per pupil from local non-tax sources	.495
41	Municipal revenue per capita from fines and forfeitures	.359
3	Assessed valuation per capita	.355
51	Municipal disbursements per capita for health and sanitation	.317
39	Municipal revenue per capita from special assessments	.258
50	Municipal disbursements per capita for protection	.249
2	Equalized valuation per capita	.246
58	Securities purchased by municipalities per capita	.242
5	Equalized valuation of mercantile property per capita	.213
17	Net reported corporate income tax per capita	.163
45	Receipts per capita from municipal public service enterprises	-.166
64	Receipts per pupil from county sources	-.177
7	Equalized valuation of agricultural property per capita	-.239
66	Receipts per pupil from federal sources	-.260
33	Municipal tax rate on equalized valuation	-.305
42	Municipal revenue per capita from gifts and grants	-.429
63	Receipts per pupil from state sources	-.460

Both per-capita personal income tax payments and effective buying income are correlated highly with this factor, as is equalized valuation of residential property per capita. Corporate income tax payments, on the other hand, show only slight correlation with this factor, and equalized valuation of agricultural property has a low negative correlation. No category of municipal revenue or disbursement correlated highly with this factor, although several show slight or moderate correlation.

The operation of Wisconsin's state support program for public schools is evident. Receipts per pupil from local tax sources are high in wealthy districts, while receipts per pupil from state sources are low in such districts. Thus, it appears that the present state support program is equalizing the burden of school support, at least to some degree.

Total equalized valuation per capita shows only a slight correlation with Factor A-1, whereas equalized valuation of residential property is highly correlated. The municipal tax rate on equalized valuation is inversely related to personal income payments. Without doubt, this relationship is heavily influenced by the fact that Wisconsin shares income tax receipts with the municipality in which the taxpayer resides. Consequently, municipalities whose residents enjoy a high level of personal income receive a substantial amount of shared income tax and thus are able to support municipal services with a relatively low property tax levy. If it be assumed that all taxes are paid from current income, it would appear that basing state support for local school districts on equalized valuation of residential property rather than on total equalized property valuation would be desirable.

Factor B-1. -- Factor B-1 describes municipal revenue derived from general property taxation. This factor accounts for 4.1 percent of the

136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	155	159	160	161	
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.31	1.00																				137
.65	.39	1.00																			138
.05	.10	-.08	1.00																		139
.02	-.01	-.09	.41	1.00																	140
.14	.27	-.02	.24	.21	1.00																141
.09	.15	.01	.60	.42	.16	1.00															142
.06	.01	-.04	.51	.45	.13	.71	1.00														143
.16	.05	-.22	.35	.38	.19	.25	.30	1.00													144
.17	-.11	-.14	-.03	-.25	-.01	-.10	-.11	-.04	1.00												145
.06	-.03	.16	-.33	-.28	-.02	-.21	-.28	-.46	.03	1.00											146
.33	.19	.01	.21	.25	.18	.11	.23	.30	.02	-.37	1.00										147
.20	.18	.24	-.31	-.30	-.17	-.21	-.26	-.33	-.07	.52	-.30	1.00									148
.26	.12	.15	.01	.04	-.12	.02	.11	.04	-.09	.01	.11	.24	1.00								149
.56	.21	.39	-.06	-.01	.10	-.05	-.07	-.03	-.10	.05	.13	.15	.16	1.00							150
.21	-.11	-.30	.19	.17	.18	.20	.27	.25	.19	-.33	.27	-.40	.01	-.28	1.00						151
.19	.12	.21	-.23	-.20	-.20	-.15	-.12	-.23	.12	.20	-.00	.17	.04	-.02	-.10	1.00					152
.33	.35	.33	.09	.07	.06	.09	.08	.03	-.15	.05	.14	.03	.15	.46	-.33	-.11	1.00				155
.12	.16	-.02	.20	.19	.17	.21	.25	.22	.02	-.08	.29	-.15	.07	.16	.12	-.17	.45	1.00			159
-.01	-.15	-.03	-.16	-.12	-.08	.18	-.15	-.17	.01	.11	-.26	.03	.06	-.09	-.09	.08	-.37	-.28	1.00		160
.39	.29	.02	.39	.43	.43	.28	.35	.39	-.13	-.45	.46	-.38	.14	.29	.23	-.17	.21	.25	-.10	1.00	161

total variance and slightly over five percent of the common variance. The following variables correlate significantly with Factor B-1:

	Variable	Correlation
36	Municipal receipts per capita from general property tax	.852
33	Municipal tax rate on equalized valuation	.823
35	Total receipts per capita from general property tax	.236
5	Equalized valuation of mercantile property per capita	.216
1	Population of school district	.207
44	Municipal revenue per capita from commercial receipts	.190
50	Municipal disbursements per capita for protection	.179
18	Retail sales per capita	.169
27	Median years of school completed by population age 25 & over	-.188
12	Percent of residential buildings occupied by owner	-.190
34	School tax rate on equalized valuation	-.235

It will be noted that only municipal receipts from general property taxes and municipal tax rate on equalized valuation are highly correlated with Factor B-1. It would appear that the municipal tax rate is somewhat dependent upon degree of urbanization. The relationships of the variables associated with this factor suggests that municipal tax rates increase as the total population of the area served increases and as equalized valuation of mercantile property increases. It also appears that municipal tax rates are higher in areas having greater retail sales per capita. Perhaps of greatest interest is the inverse relationship between municipal and school tax rates. As municipal tax rate on equalized valuation increases, school tax rates tend to decrease. These data suggest that school districts in which a high municipal tax rate is levied encounter difficulty in securing an increased local tax effort in support of the public schools.

Factor C-1. -- This factor is closely related to manufacturing activity. The factor correlates highly with both corporate income tax payments and equalized valuation of manufacturing property. This factor accounts for over 5.5 percent of the total variance and slightly over seven percent of the common variance. The following variables correlate significantly with Factor C-1:

	Variable	Correlation
17	Net reported corporate income tax per capita	.886
6	Equalized valuation of manufacturing property per capita	.866
3	Assessed valuation per capita	.440
38	All other municipal tax receipts per capita	.375
68	Receipts per pupil from other sources	.329
65	Receipts per pupil from local tax sources	.280
35	Total receipts from general property tax per capita	.240
58	Securities purchased by municipalities per capita	.228
18	Retail sales per capita	-.191
66	Receipts per pupil from federal sources	-.213
7	Equalized valuation of agricultural property per capita	-.221
63	Receipts per pupil from state sources	-.278
34	School tax rate on equalized valuation	-.303

This factor has a moderate positive correlation with school support from local tax sources and a moderate negative correlation with school tax rate on equalized valuation. The relationships also indicate that receipts from federal sources and receipts from state sources are smaller in school districts which have substantial manufacturing activity. Assessed valuation of all property is moderately correlated with this factor. The fact that school tax rate declines as manufacturing activity increases does not necessarily indicate a lower level of school support. It is more likely to be indicative of a larger tax base and consequently lower tax rates are required to support the schools.

Factor D-1. -- This factor is relatively specific for certain types of municipal disbursement. The factor accounts for over 4.5 percent of the total variance and nearly 5.8 percent of the common variance. The following variables correlate significantly with Factor D-1:

	Variable	Correlation
55	Municipal disbursements per capita for recreation	.893
56	Municipal disbursements per capita for public service enterprises	.762
59	Municipal disbursements for debt service per capita	.739
58	Securities purchased by municipalities per capita	.231
18	Retail sales per capita	.174

Factor D-1 is quite specific for municipal disbursements for recreation, public service enterprises, and debt service. It also shows a slight positive correlation with securities purchased, a relationship which might be anticipated in view of the high correlation with municipal debt service. Retail sales per capita also has a slight positive correlation with Factor D-1, suggesting that expenditures associated with this factor may be typical of more heavily populated areas. The fact that no statistically significant correlation was found with any measure of wealth or with any measure of school support is important. Apparently expenditures for these municipal services are essentially unrelated to school support.

Factor F-1. -- This factor is relatively specific for equalized valuation of property. It accounts for 2.7 percent of the total variance and 3.4 percent of the common variance. The following variables correlate significantly with Factor F-1:

	Variable	Correlation
2	Equalized valuation per capita	.874
28	Postal receipts per capita	.433
3	Assessed valuation per capita	.343
4	Equalized valuation of residential property per capita	.326

It is of great interest to note that while Factor F-1 is relatively specific for equalized valuation, it has no significant correlation with measures of income and has significant correlation with only one component of equalized valuation; namely, equalized valuation of residential property. The nautre of this factor lends support to the view that equalized property valuation is not a particularly good criterion of the ability of a district to support education.

Factor G-1. -- This factor describes the operation of municipal public service enterprises. It accounts for 2.7 percent of the total variance and 3.5 percent of the common variance. The following variables correlate significantly with Factor G-1:

	Variable	Correlation
45	Receipts per capita from municipal public service enterprises	.841
56	Municipal disbursements per capita for public service enterprises	.523
3	Assessed valuation per capita	.194
40	Municipal revenue from licenses per capita	-.220

Factor G-1 has a high correlation with receipts from municipal public service enterprises and a moderately high correlation with disbursements for public service enterprises. This factor is quite specific, having significant correlations with only two other variables. It has no statistically significant correlation with various measures of wealth nor with measures of school support.

Factor H-1. -- This factor is also relatively specific for certain categories of municipal disbursement. The factor accounts for 4.5 percent of the total variance and 5.7 percent of the common variance. The following variables correlate significantly with Factor H-1:

	Variable	Correlation
49	Municipal disbursements for general government per capita	.832
51	Municipal disbursements for health and sanitation per capita	.772
50	Municipal disbursements for protection per capita	.727
53	Municipal disbursements for highways per capita	.225

Factor H-1 describes disbursements by municipalities for general government, health and sanitation, and protection. It also has a low positive correlation with municipal disbursements for highways. This factor has no significant correlation with district wealth as measured by property valuations or personal income, and has no correlation with school support as measured by school tax rate and sources of school district funds.

Factor J-1. -- Factor J-1 describes municipal indebtedness. It accounts for 3.1 percent of the total variance and four percent of the common variance. The following variables correlate significantly with Factor J-1:

	Variable	Correlation
62	Municipal temporary loans outstanding per capita	.809
61	Municipal long-term debt per capita	.773
59	Municipal disbursements for debt service per capita	.335
18	Retail sales per capita	.192

Factor J-1 has a relatively high correlation with both municipal short-term debt and municipal long-term debt. It has a moderate correlation with municipal disbursements for debt service. The factor also has a slight correlation with retail sales per capita, indicating a tendency for municipal debt to be associated with urban areas. Again, this factor has no correlation with various measures of wealth, nor with various measures of school support.

Factor K-1. -- This factor is most closely associated with municipal revenues and special assessments. It accounts for 3.9 percent of the total variance and five percent of the common variance. The following variables correlate significantly with Factor K-1:

	Variable	Correlation
39	Municipal revenue from special assessments per capita	.793
40	Municipal revenue from licenses per capita	.698
53	Municipal disbursements for highways per capita	.559
27	Median years of school completed by population age 25 & over	.302
41	Municipal revenue from fines and forfeitures per capita	.219
4	Equalized valuation of residential property per capita	.203
14	Effective buying income per capita	.169

Factor K-1 is quite highly correlated with municipal disbursements for highways and moderatley correlated with median years of school completed by the adult population. It would appear that this factor is associated with rapidly growing areas having substantial roadway construction with associated special assessments for curbs, gutters, sidewalks, etc. It is also correlated at a relatively high level with revenue per capita from licenses. It shows a slight correlation with effective buying income per capita, but no significant correlation with other variables which reflect wealth nor with variables relating to school support.

Factor M-1. -- Factor M-1 is associated with population size. The factor accounts for 2.9 percent of the total variance and 3.6 percent of the common variance. The following variables correlate significantly with Factor M-1:

	Variable	Correlation
1	Population of school district	.742
41	Municipal revenue from fines and forfeitures per capita	.556
58	Securities purchased by municipalities per capita	.443
57	Unclassified municipal disbursements per capita	.183
12	Percent of residential buildings occupied by owner	-.219

From the relationship of variables to Factor M-1 it would appear that municipal revenue from fines and forfeitures is directly related to population size and that the percent of owner-occupied residential buildings is inversely related to population size. There is a moderate correlation between this factor and securities purchased by municipalities and a slight correlation with unclassified municipal disbursements. Apparently, as a municipality increases in size, a greater proportion of its disbursements are included within a miscellaneous category. Factor M-1 has no significant relation to measures of income and wealth, nor to variables related to school support.

Factor N-1. -- Factor N-1 is descriptive of owner-occupied dwellings. It accounts for 2.6 percent of the total variance and 3.2 percent of the common variance. The following variables correlate significantly with Factor N-1:

	Variable	Correlation
12	Percent of residential buildings occupied by owner	.704
3	Assessed valuation per capita	.180
66	Receipts per pupil from federal sources	.170
33	Municipal tax rate on equalized valuation	-.165
5	Equalized valuation of mercantile property per capita	-.265
50	Municipal disbursements for protection per capita	-.270
41	Municipal revenue from fines and forfeitures per capita	-.360
18	Retail sales per capita	-.408

While Factor N-1 provides by no means a perfect description of owner-occupied dwellings, it correlates more closely with this variable than with any other. It has a slight correlation with assessed valuation per capita and with receipts per pupil from federal sources. There is a moderate negative correlation between Factor N-1 and retail sales per capita, indicating there is relatively little mercantile development in areas where a substantial percentage of residential buildings are occupied by the owner. (This situation may be a by-product of the development of shopping centers and residential suburbs surrounding urban areas.) Municipal disbursements for protection are inversely related to Factor N-1, as are municipal revenues from fines and forfeitures. The factor has no significant correlation with school tax rates, although it does have a slight negative correlation with municipal tax rate.

Factor Q-1. -- This factor reflects municipal revenue from commercial receipts. Factor Q-1 accounts for 3.2 percent of the total variance and four percent of the common variance. The following variables correlate significantly with Factor Q-1:

	Variable	Correlation
44	Municipal revenue from commercial receipts per capita	.739
5	Equalized valuation of mercantile property per capita	.480
28	Postal receipts per capita	.418
18	Retail sales per capita	.391
36	Municipal receipts from general property tax per capita	.278
59	Municipal disbursements for debt service per capita	.166
63	Receipts per pupil from state sources	-.256

The relationship of variables within Factor Q-1 indicates that school district receipts from state sources are inversely related to the amount of municipal revenue derived from commercial receipts. There is a moderate correlation between this factor and equalized valuation, postal receipts, and retail sales.

Specific Factors

Sixteen specific factors, which accounted for 25.23 percent of the total variance and 31.95 percent of the common variance, were extracted.

Factor E-1. -- This factor, which accounted for 1.6 percent of the total variance and 2.1 percent of the common variance, is not highly correlated with any variable. Its closest association is with equalized valuation of agricultural property. It also exhibits slight correlation with total receipts from general property taxes, school district receipts from local tax sources, and with municipal expenditures for highways. The following variables correlate significantly with Factor E-1:

	Variable	Correlation
7	Equalized valuation of agricultural property per capita	.666
35	Total receipts from general property tax per capita	.229
65	Receipts per pupil from local tax sources	.180
53	Municipal disbursements for highways per capita	.176

Factor I-1. -- This factor accounts for 2.6 percent of the total variance and 3.3 percent of the common variance. This factor is associated with county tax rates. As would be expected, it is correlated to a degree with total general property tax receipts. It also shows a slight correlation with school district receipts from state sources, value of mercantile property, municipal revenue from gifts and grants-in-aid and school district receipts from federal sources. It has a negative correlation with postal receipts. It would appear that county property tax rates will be higher in areas which receive more revenue from gifts and grants and which have more of their total equalized valuation composed of mercantile property. High county tax rates are also associated with school districts which receive a greater proportion of their revenue from state and federal sources. Postal receipts are lower in areas which have relatively high county tax rates. The following variables correlate significantly with Factor I-1:

	Variable	Correlation
32	County tax rate on equalized valuation	.850
35	Total receipts from general property tax per capita	.268
63	Receipts per pupil from state sources	.254
5	Equalized valuation of mercantile property per capita	.232
42	Municipal revenue from gifts and grants per capita	.201
66	Receipts per pupil from federal sources	.170
28	Postal receipts per capita	-.269

Factor L-1. -- This factor describes school tax rate. It accounts for 1.9 percent of the total variance and 2.4 percent of the common variance. School districts with higher tax rates receive more support from state sources and from local tax sources. This factor reflects the incentive element in Wisconsin's state support program. Districts which have less than the guaranteed valuation per pupil are encouraged to increase their tax levy for school purposes, since the state will match the local levy on the difference between the actual and the guaranteed valuation per pupil. Municipal disbursements for highways vary inversely with the local school tax rate. The following variables correlate significantly with Factor L-1:

	Variable	Correlation
34	School tax rate on equalized valuation	.756
63	Receipts per pupil from state sources	.243
65	Receipts per pupil from local tax sources	.241
53	Municipal disbursements for highways per capita	-.191

Factor O-1. -- This factor describes motor vehicle registrations. It accounts for 1.8 percent of the total variance and 2.2 percent of the common variance. The following variables correlate significantly with Factor O-1:

	Variable	Correlation
29	Motor vehicles registered per family	.735
7	Equalized valuation of agricultural property per capita	.233
53	Municipal disbursements for highways per capita	.226

Municipal disbursements for highways exhibit a slight correlation with this factor. Factor O-1 is also associated with valuation of agricultural property, a relationship which may be due to the inclusion of farm vehicles in total motor vehicle registrations.

Factor P-1. -- This factor is associated with municipal disbursements for education. Such disbursements are for educational programs separate and apart from those conducted by the public schools. Factor P-1 accounts for 1.6 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor P-1:

	Variable	Correlation
54	Municipal disbursements for education per capita	.690
51	Municipal disbursements for health and sanitation per capita	.235
28	Postal receipts per capita	.182
18	Retail sales per capita	.174
53	Municipal disbursements for highways per capita	-.198

There is a slight correlation between Factor P-1 and municipal disbursements for health and sanitation, postal receipts, and retail sales. These relationships suggest that educational programs financed by municipalities are more apt to be found in urban areas where one would expect concentrations of retail sales and postal activity. The slight negative correlation of the factor with municipal disbursements for highways tends to support this conclusion, since well-developed urban areas should require lower per-capita expenditures for highway construction.

Factor R-1. -- This factor, which accounts for 2.3 percent of the total variance and 2.9 percent of the common variance, describes property tax delinquency. The following variables correlate significantly with Factor R-1:

	Variable	Correlation
47	Percent of total property tax delinquent	.818
5	Equalized valuation of mercantile property per capita	.369
32	County tax rate on equalized valuation	.173
7	Equalized valuation of agricultural property per capita	-.225

Factor R-1 is moderately correlated with equalized valuation of mercantile property indicating that property tax delinquency tends to increase as the valuation of mercantile property increases. The factor shows a slight positive correlation with county tax rate. It also shows a slight negative correlation with valuation of agricultural property, indicating that property tax delinquency is lower in rural areas. However, one cannot directly ascribe property tax delinquency to amount of mercantile property, since the amount of mercantile property may reflect degree of urbanization.

Factor S-1. -- This factor, which describes municipal disbursements for welfare, accounts for 1.8 percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor S-1:

	Variable	Correlation
52	Municipal disbursements for welfare per capita	.786
27	Median years of school completed by population age 25 & over	.230
55	Municipal disbursements for recreation per capita	.180

Municipal expenditures for welfare are directly related to the level of education of the adult population. This relationship is undoubtedly due to the fact that welfare payments are larger in urban areas, areas which tend to have a higher level of education as measured by years of school completed.by the adult population. Urban areas typically have a larger staff of welfare workers than rural areas and the level of welfare payments needed to cover subsistence costs will generally be greater in urban areas. The slight correlation betwwen Factor S-1 and municipal disbursements for recreation also lends support to the view that disbursements for welfare are associated with urban places, since disbursements for recreation in rural municipalities are typically quite low.

Factor T-1. -- This factor describes school district receipts from miscellaneous non-tax sources. It accounts for 1.7 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor T-1:

	Variable	Correlation
68	Receipts per pupil from other sources	.717
6	Equalized valuation of manufacturing property per capita	.289
3	Assessed valuation per capita	.189
28	Postal receipts per capita	-.198

School district receipts from other sources include payments in lieu of taxes, refunds, rental of facilities, income from deposits and investments, etc. Apparently income from such sources is greater in areas which have a relatively large amount of manufacturing property. The factor is also slightly correlated with assessed valuation. Perhaps more significant is the fact that Factor T-1 has no significant correlation with wealth as measured by income, nor with other sources of school support.

Factor U-1. -- This factor, which accounts for 1.9 percent of the total variance and 2.4 percent of the common variance, describes school district support from county sources. Wisconsin school districts receive a flat grant of $300 per elementary teacher from the county. The following variables correlate significantly with Factor U-1:

	Variable	Correlation
64	Receipts per pupil from county sources	.696
18	Retail sales per capita	-.197
14	Effective buying income per capita	-.198
63	Receipts per pupil from state sources	-.202

School support from county sources is inversely related to retail sales and effective buying income. It is also inversely related to school support from state sources, indicating revenue from state sources is lower in districts which receive substantial support from county sources.

Factor V-1. -- This factor is associated with assessed valuation, although its correlation with assessed valuation is quite low. The factor accounts for only .6 percent of the total variance and .8 percent of the common variance. It also shows a slight correlation with municipal revenue for licenses. It appears that assessed valuation bears no consistent relationship with the other variables under study. This lack of relationship was anticipated, since local assessed valuations are determined by persons with widely varying degrees of competence. The following variables correlate significantly with Factor V-1:

	Variable	Correlation
3	Assessed valuation per capita	.401
40	Municipal revenue from licenses per capita	.200

Factor W-1. -- This factor describes miscellaneous municipal revenue. It accounts for 1.7 percent of the total variance and 2.2 percent of the common variance. The following variables correlate significantly with Factor W-1:

	Variable	Correlation
43	Municipal revenue from other general receipts per capita	.652
66	Receipts per pupil from federal sources	.344
7	Equalized valuation of agricultural property per capita	.269
18	Retail sales per capita	-.169

The factor is moderately correlated with equalized valuation of agricultural property and slightly correlated with district receipts from federal sources. It has a low negative correlation with retail sales per capita. These relationships suggest that municipal revenue from miscellaneous sources is associated with rural areas.

Factor X-1. -- This factor, which accounts for two percent of the total variance and 2.5 percent of the common variance, describes miscellaneous municipal disbursements. The following variables correlate significantly with Factor X-1:

	Variable	Correlation
57	Municipal unclassified disbursements per capita	.635
61	Municipal long-term debt per capita	.212
5	Equalized valuation of mercantile property per capita	.167
7	Equalized valuation of agricultural property per capita	-.179
63	Receipts per pupil from state sources	-.211
66	Receipts per pupil from federal sources	-.227
3	Assessed valuation per capita	-.241
67	Receipts per pupil from local non-tax sources	-.261

Municipal long-term debt shows a slight correlation with this factor, as does valuation of mercantile property. A number of variables which relate to school support show a slight to moderate negative correlation with Factor X-1. The relationship of variables to Factor X-1 indicates that as unclassified municipal disbursements increase, school district receipts from state sources and federal sources, and local non-tax sources decrease. Equalized valuation of agricultural property also shows a slight negative correlation with this factor, indicating that unclassified municipal disbursements are relatively small in rural municipalities. It is interesting to note that Factor W-1 is positively related to the valuation of agricultural property, while Factor X-1 is inversely related to the valuation of agricultural property. This relationship may be due to accounting practices. Large municipalities may include within miscellaneous disbursements items which small municipalities would allocate to specific budget categories. The negative correlation with school district receipts from state and federal sources substantiates the view that miscellaneous municipal disbursements are associated with urban areas, since districts in such areas tend to receive a lower amount of state and federal support.

Factor Y-1. -- This factor describes a specific source of municipal revenue--gifts and grants-in-aid. The major grant-in-aid within this category is aid paid by the state to municipalities in support of highways. The factor accounts for 1.3 percent of the total variance and 1.6 percent of the common variance. The following variables correlate significantly with Factor Y-1:

	Variable	Correlation
42	Municipal revenue from gifts and grants per capita	.536
63	Receipts per pupil from state sources	.238
28	Postal receipts per capita	.166
4	Equalized valuation of residential property per capita	-.169

Factor Y-1 shows a slight positive correlation with school district receipts from state sources as well as with postal receipts. It is inversely related to equalized valuation of residential property.

Factor Z-1. -- This factor describes school district receipts from local non-tax sources. It accounts for .7 percent of the total variance and .9 percent of the common variance. Only Variable 67 (receipts per pupil from local non-tax sources) correlated with Factor Z-1 at a statistically significant level, the correlation being .467. Receipts from local non-tax sources consist primarily of direct charges to pupils in the form of fees or rental of books, supplies, lockers and similar items. No variable measuring wealth as reflected in property values or personal income payments correlated significantly with Factor Z-1, nor did any other variable relating to school support. Apparently local district policy regarding the cost of the educational program to be borne by direct pupil charges is not systematically associated with income level, property valuation, or other sources of school revenue.

Factor AA-1. -- This factor accounts for one percent of the total variance and 1.2 percent of the common variance. It describes secuities purchased by municipalities, although the correlation with this variable is not high. Municipal disbursements for general government are also slightly correlated with the factor. The following variables correlate significantly with Factor AA-1:

	Variable	Correlation
58	Securities purchased by municipalities per capita	.490
50	Municipal disbursements per capita for protection	.239

Factor CC-1. -- This factor describes school district receipts from federal sources and accounts for .7 percent of the total variance and .8 percent of the common variance. Only Variable 66 (receipts per pupil from federal sources) correlated with Factor CC-1 at a statistically significant level, the correlation being .426.

Factors "Destroyed" by Rotation

Four factors--BB-1, DD-1, EE-1, and FF-1--were "destroyed" by rotation of the factor matrix. These four factors accounted for only .95 percent of the total variance and but 1.21 percent of the common variance. Variable 27 (median years of school completed by the population age 25 and over) correlated at .291 with Factor BB-1 and was the only variable which exhibited a statistically significant correlation with the factor. No variables were found to correlate with Factor DD-1 at a statistically significant level. A correlation of .207 was found between Variable 5 (equalized valuation of mercantile property per capita) and Factor EE-1. No other variables were found to have significant correlation with this factor. Only Variable 63 (receipts per pupil from state sources) yielded a statistically significant correlation with Factor FF-1, its correlation with the factor being .194.

Factor Analysis of Need Variables

Of the 85 variables originally categorized as reflecting need for educational services, 23 were discarded for reasons discussed earlier in this chapter. Application of the IMAGE program to the 62 remaining variables resulted in the extraction of 43 factors having eigenvalues $\geq$ 1.0. These 43 factors accounted for 78.85 percent of the total variance associated with the 62 variables. The matrix of correlations between each factor and all variables is shown in Table 5.10.

General Factors

A total of eight general factors were identified. These eight factors accounted for 35.28 percent of the total variance of the 62 variables and for 44.75 percent of the common variance associated with the 43 factors extracted.

Factor A-2. -- This factor describes expenditures for programs for the educable mentally handicapped. It accounts for 2.7 percent of the total variance and 3.4 percent of the common variance. The following variables correlate significantly with Factor A-2:

	Variable	Correlation
141	Expenditure per pupil for education of educable mentally handicapped	.775
135	Expenditure per pupil for current operation, elementary	.461
161	Mean teacher salary, K-12	.353
105	Percent of teachers with five years professional preparation	.337
140	Expenditure per pupil for education of trainable mentally handicapped	.205
112	Median years of total teaching experience, secondary teachers	.192
125	Average size of high school vocational classes	.184
137	Expenditure per pupil for elementary school library books, materials, and supplies	.169

TABLE 5.10

ROTATED FACTOR MATRIX OF 62 VARIABLES RELATED TO NEED FOR EDUCATIONAL SERVICES IN 104 WISCONSIN SCHOOL DISTRICTS

FACTORS

VAR.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL
80	.040	-.073	.064	.018	.000	-.295	-.041	-.063	.003	-.018	-.020	-.123	.049	-.052	-.049	.123	-.019	-.004	-.063	-.023	.002	.001	-.010	.002	-.043	-.022	-.035	.052	.013	-.116	.720	.093	.015	.036	-.002	.069	-.021	-.049
82	-.090	-.440	-.002	.121	.023	-.391	-.035	.135	-.227	.060	.050	-.112	-.079	-.214	-.118	.079	.102	.100	-.035	-.089	.109	-.014	.043	.032	.079	-.066	-.015	.161	.042	-.110	.038	.183	-.080	-.198	.001	.076	-.139	-.238
85	-.008	.010	.039	-.085	-.838	.036	.018	.056	-.069	.031	-.116	.106	-.037	.001	-.074	-.010	-.089	.056	-.072	-.014	-.004	.064	-.049	-.031	-.092	-.001	.044	.100	.067	-.104	-.001	.065	-.017	-.075	-.031	.097	.019	-.023
86	-.017	-.057	.035	.010	.501	-.060	.194	.191	.072	-.338	.062	.030	-.012	.060	.127	.101	.031	-.125	-.031	.022	.021	-.079	-.023	.211	-.014	.022	.128	-.050	-.022	.015	-.089	-.141	.097	-.043	-.012	-.163	.174	.078
88	.145	-.056	.015	.081	-.635	-.206	-.048	.039	-.042	.117	-.025	.068	.288	-.031	-.050	-.075	-.183	-.102	-.025	-.091	.163	.011	-.120	-.125	.034	.066	-.031	.079	-.202	-.134	.053	.085	.058	.052	.082	.107	.046	.035
89	-.117	.093	-.022	-.151	.171	.076	.006	.069	-.045	.049	.123	.003	.064	-.086	.063	-.031	.769	.006	-.012	.025	.081	-.025	.012	.101	-.092	-.022	.002	-.042	.010	.115	-.020	-.115	-.033	-.060	.001	-.041	-.001	-.021
90	-.034	.007	-.015	.049	-.022	-.069	.105	-.071	.106	.029	.059	.023	-.061	-.031	-.019	.031	.003	.749	.031	.044	.110	-.044	.044	.051	.013	-.019	.005	-.043	.009	.058	-.015	-.056	-.068	.050	.000	-.144	-.006	.008
91	-.013	.092	-.051	.000	.130	.052	-.030	.045	.137	-.755	.017	-.145	-.015	.040	-.069	.001	-.043	-.022	.032	.032	.031	.006	.117	-.113	.082	-.013	-.031	.013	-.002	.115	.012	-.039	-.013	-.038	.001	-.042	-.013	.009
92	.012	-.026	-.027	.036	.128	-.069	-.010	-.046	.072	-.138	.069	-.767	-.007	-.016	.048	.031	.010	.006	-.039	-.017	-.025	-.056	-.048	-.066	.072	-.035	-.005	.015	.002	.075	.112	.019	.068	.072	-.003	-.108	-.002	.009
93	.137	-.005	.010	.077	.084	-.020	.027	.085	.018	-.100	.015	.062	.037	-.055	.046	-.075	.011	.047	-.016	-.020	-.046	-.014	.772	.068	-.025	.019	.004	-.035	.008	-.035	.000	-.083	-.036	-.015	.000	-.022	.002	-.006
94	-.226	-.228	.057	-.103	.267	.103	.057	-.380	.001	-.045	-.002	-.182	.026	.148	-.031	.060	.102	.075	-.046	-.069	-.170	.006	-.095	.076	.131	-.493	-.014	-.015	.015	.101	.118	.087	.109	-.126	.008	.003	.018	.067
95	-.003	-.675	-.104	.099	.144	-.182	-.121	-.187	.052	.137	.153	.071	-.017	-.092	.083	.133	.039	-.013	-.076	-.066	.058	-.152	.057	.042	.006	.062	-.076	.089	-.011	-.126	-.032	-.027	.118	-.237	.048	-.213	-.018	-.053
99	-.067	-.023	-.042	-.852	.052	.051	.077	-.057	.011	-.028	.048	-.037	.036	-.045	-.074	-.036	.189	.000	.025	-.037	-.065	-.052	-.046	.025	-.031	-.097	.039	-.090	-.079	.052	.006	-.012	.039	-.018	.051	.010	-.059	.055
100	.008	-.310	.082	-.256	-.032	-.118	-.008	-.111	-.049	-.067	-.001	.123	.072	-.025	-.039	.060	.079	-.088	-.035	-.012	-.094	-.065	.027	.004	.029	-.041	.015	.063	.006	-.039	-.068	.006	-.021	-.642	-.001	.090	.001	.001
101	-.042	-.309	.123	-.014	-.052	.003	-.011	-.795	-.062	.083	.075	-.077	.085	.048	-.068	.094	-.089	.094	-.012	.036	-.061	-.030	-.119	-.049	.032	-.054	.066	-.117	-.005	-.044	.079	.095	.053	-.084	.000	.000	.001	-.009
102	-.032	.001	.033	-.838	-.087	-.067	-.078	.034	.011	.033	.002	.083	-.100	.014	-.093	-.031	-.052	-.050	-.031	.025	-.027	.026	-.051	-.043	.161	.065	-.022	.054	.083	.024	-.032	.031	-.099	-.137	-.054	.058	.058	-.035
103	-.317	.189	-.104	-.094	.116	.226	.120	-.278	.060	.002	.066	-.358	-.103	.142	.075	.006	-.067	-.127	.048	.090	-.036	-.004	-.200	.068	.252	.082	-.118	-.203	-.065	.359	-.079	-.158	.057	-.019	.053	-.124	-.002	-.071
105	.337	-.230	-.021	.085	-.272	-.191	-.009	.113	-.042	-.022	-.014	.126	.188	-.011	.008	.061	.137	-.072	-.112	.107	.055	.037	.191	.013	-.028	-.040	-.056	.225	.067	-.415	.062	.080	.069	.006	-.042	.228	.167	-.073
106	.078	.101	.114	.120	-.304	-.071	-.058	-.100	.027	.059	.042	-.050	-.172	-.042	-.148	-.158	-.005	-.104	.128	.130	-.084	.032	.109	.044	-.150	-.076	.104	-.009	-.094	-.137	.391	.191	.040	.053	.022	.289	.233	.228
107	.135	.007	.119	.149	-.115	-.118	-.083	.047	.067	.104	-.102	.115	-.048	.031	-.064	.036	.107	-.017	-.039	-.010	-.010	.034	.031	-.062	-.706	.039	.003	-.087	.008	-.087	.066	.020	-.024	.022	.001	.249	.001	.000
108	.080	.067	-.021	-.032	.134	.176	-.012	-.087	-.034	.010	-.029	.014	-.091	.018	.106	-.105	.046	.043	.035	.039	.007	.042	.037	.042	-.065	-.005	.007	-.768	.001	.092	-.044	-.109	-.029	.043	-.002	-.064	.001	.037
111	.079	-.057	-.786	-.001	.048	.036	.007	.091	.049	-.048	.000	-.021	.001	.126	.031	-.059	.025	.041	.002	.064	.046	-.071	-.016	-.012	.085	.024	.009	-.018	.020	.030	-.068	-.166	-.020	.046	.006	-.187	-.011	-.007
112	.192	-.150	-.231	-.032	-.244	-.226	-.059	-.065	.140	.111	.008	.006	.144	.009	-.142	.122	-.087	-.111	-.025	-.015	-.161	-.098	.229	.144	.056	-.045	-.007	.152	-.028	-.554	.006	-.099	.006	-.030	-.023	.015	.184	.023
119	-.079	-.743	-.127	.046	.007	-.071	-.058	-.168	.130	-.066	-.057	.001	-.010	-.171	-.053	-.032	.001	-.062	.063	-.112	.076	.176	-.029	-.146	-.023	.029	.035	.015	.008	-.065	-.015	.004	-.008	.076	-.038	-.012	.096	.015
120	.079	-.816	.076	-.070	.007	-.128	-.074	-.066	.019	.080	.001	.010	-.077	-.015	-.010	-.036	-.106	.078	-.083	.017	-.043	.104	.103	-.034	-.072	-.007	-.007	.053	.035	-.048	.030	.114	.023	-.011	.015	.020	.024	-.040
121	-.050	-.748	-.084	-.116	-.033	-.008	.040	.089	.179	.007	.018	-.072	-.076	-.025	-.018	.112	-.015	-.027	.036	.040	-.075	-.071	-.085	.100	.210	-.110	-.008	-.065	-.053	-.042	.011	-.072	-.017	-.173	-.040	.104	-.071	.005
122	.007	-.732	-.005	.036	-.032	-.157	-.032	-.090	-.101	-.007	.122	-.005	.115	.207	.063	.119	-.110	-.014	-.208	-.072	-.009	-.016	-.039	.006	-.063	.119	-.110	-.014	-.208	.072	.038	.118	-.030	-.027	-.008	.069	-.021	.078
123	.130	-.347	-.008	-.029	-.135	-.105	-.094	-.019	-.108	.050	-.045	-.073	.025	.091	.084	-.052	.014	-.066	-.654	-.055	-.043	-.031	.039	.062	-.041	.026	-.057	.053	-.009	-.155	.056	.079	-.009	-.049	.000	.215	-.003	-.005
124	.060	-.149	.103	-.134	-.133	-.168	-.143	.021	-.057	.017	-.001	.125	.062	-.046	.018	.110	-.059	-.139	-.130	-.128	-.104	.066	-.092	.072	-.151	.031	.023	.076	-.016	-.145	.040	.106	.034	-.138	.054	.729	-.034	-.121
125	.184	-.612	.226	.040	.018	-.266	.011	-.095	-.156	.069	.014	.061	.038	-.112	-.137	.044	.094	-.044	-.213	.015	.020	-.241	.016	.077	-.954	.013	-.162	.000	.010	-.246	.082	.080	.019	.005	.048	.146	.007	-.106
126	.022	-.212	.157	.070	-.014	-.140	-.133	-.120	-.349	.211	-.051	.183	-.103	.011	-.021	.243	.167	-.188	-.127	-.038	.137	.094	.080	.010	.069	.024	.003	-.025	-.019	-.117	.000	-.093	-.012	-.004	.002	.145	.005	-.061
127	-.018	-.034	.012	-.016	-.139	-.011	-.008	-.028	-.127	-.100	.065	-.057	-.092	.134	.043	.060	-.091	-.055	-.042	-.033	.038	.162	-.080	-.739	-.047	.015	.016	.045	-.005	.017	-.007	.025	-.028	.002	.000	-.018	-.002	-.006
128	-.007	-.017	.085	.029	-.147	.105	.041	.020	-.071	.017	.024	.055	.060	.061	-.047	-.051	-.018	-.048	.007	.073	-.034	.775	-.016	-.162	-.026	-.001	.044	-.044	.003	.040	.020	-.001	.008	.041	.002	.152	-.001	.008
129	.007	-.107	-.016	-.066	.174	.172	-.050	.092	.100	-.014	-.050	.012	-.732	-.002	-.047	-.103	.074	.109	.033	.029	-.027	-.077	-.073	-.131	-.048	.015	-.035	-.119	.012	.089	-.037	-.241	-.062	.062	.006	-.113	-.002	.007
130	-.023	-.087	-.096	.030	-.002	.033	.059	-.041	.029	-.037	-.104	.003	.005	.819	-.036	.000	-.063	-.029	-.043	-.032	-.025	.056	-.054	-.113	-.018	-.024	.013	-.017	-.005	.040	-.039	.021	.016	.016	.000	.009	-.001	.006
131	.150	-.011	.084	.105	-.543	-.015	-.078	.042	-.058	.011	.005	.048	.115	-.019	-.153	-.034	.038	-.042	-.356	.164	-.032	.113	-.033	-.078	-.078	-.072	.041	-.047	-.004	-.226	.013	.136	.059	.045	-.002	.405	.017	.100
132	.088	.016	.199	-.021	-.257	-.060	-.000	-.024	-.027	.063	-.092	.049	.081	.051	-.127	.067	-.016	-.110	-.070	.034	-.018	.149	.033	-.028	-.110	-.024	-.004	.034	.004	-.111	.089	.117	.026	.013	-.042	.799	.019	.070
133	-.060	-.124	.023	.076	.540	.085	-.016	.215	-.130	-.091	-.044	-.040	-.105	-.061	.004	.082	-.011	-.017	-.152	.074	-.078	-.211	-.015	.054	.016	-.017	-.521	.027	.010	.043	.094	-.100	.019	.029	-.001	-.037	-.009	-.011
134	.015	.124	.051	.005	-.088	.038	-.025	-.031	-.749	.117	.010	.061	.084	-.029	-.075	-.003	.023	-.094	-.055	-.001	-.006	.058	-.028	-.117	.038	.003	-.031	-.030	-.001	-.012	-.003	.083	.005	-.025	-.001	.041	-.003	-.024
135	.461	.217	.015	.042	-.355	-.193	.028	.137	-.114	.059	-.157	.152	.114	-.023	-.143	-.060	-.022	-.178	.005	.065	-.073	-.065	.063	.060	-.166	.246	.135	-.030	.047	-.237	.102	.031	.053	.206	-.068	.234	.064	.026
136	.134	.524	.148	-.007	-.323	.037	.119	.026	-.070	-.004	-.151	.068	.217	.028	-.227	-.147	-.061	.013	.008	.080	-.152	.251	.037	.079	-.059	.011	-.021	-.148	.002	-.073	.032	.100	-.047	.184	-.138	.233	.055	-.047
137	.169	.095	.009	.051	-.141	-.063	.065	.076	.016	.026	-.800	.066	-.045	.128	-.062	-.074	-.113	-.094	-.029	-.009	-.049	-.043	-.024	.059	-.088	.005	-.022	-.017	.000	.010	.024	.136	.038	-.005	-.002	.068	.000	.022
138	-.086	.335	.068	.028	-.040	-.053	.092	-.113	-.059	-.008	-.395	.079	.220	.023	-.130	-.146	-.050	.217	.001	.040	-.136	.214	.077	.108	.008	-.004	.074	-.300	.006	.092	.079	.125	.028	.112	.017	.035	-.007	-.042
139	.139	-.123	.052	.038	.015	-.654	.042	-.094	.035	.045	-.063	.008	-.013	-.140	.008	.112	.041	-.086	.061	-.074	.048	-.047	.017	-.025	-.024	.039	.004	.075	.026	-.248	.058	.067	-.010	.020	.003	.065	.019	.013
140	.205	-.089	-.001	.118	.053	-.450	-.032	-.051	-.178	-.014	.092	.035	.032	-.029	-.030	.039	.095	-.077	.039	-.157	-.260	-.050	.043	-.041	.000	.066	-.005	.203	-.018	-.225	.121	.066	.020	.021	.001	.026	.007	-.439
141	.775	-.002	.088	.075	-.072	-.115	-.076	.015	.010	.004	-.121	-.046	-.031	-.015	.100	.121	-.117	-.011	-.079	-.058	.010	.003	.134	.009	-.074	.028	-.003	-.090	-.024	-.039	-.028	.028	-.002	-.032	.016	.068	-.015	-.028
142	.061	-.144	.037	-.039	-.025	-.840	-.071	.024	.071	.064	-.088	.011	.089	.040	.033	.036	-.048	.091	-.043	.004	.050	-.028	-.048	-.005	-.083	-.021	-.017	.045	.030	-.048	.045	.034	.086	-.080	-.009	-.010	-.019	-.048
143	.016	-.190	-.069	.027	-.086	-.759	-.105	.070	-.034	-.061	.064	-.116	.068	.039	-.065	-.036	-.039	.049	.007	-.023	-.076	-.065	.085	.023	.002	.032	.057	.072	-.005	-.125	.243	.084	-.041	-.013	.010	.157	.037	.057
144	.103	-.257	.137	-.030	-.071	-.192	-.050	.049	-.011	.082	-.008	-.037	.045	.084	-.014	.090	-.053	-.118	-.053	-.568	-.012	-.183	.054	-.076	-.022	-.034	.040	.091	-.013	-.369	.029	.016	.035	-.023	.001	.054	-.009	-.017
145	.002	-.017	-.043	.074	-.039	.068	-.095	.043	-.006	-.025	.048	.019	.014	-.025	.044	-.052	.059	.089	.023	.001	.756	-.031	-.041	-.030	.007	.025	.015	.002	-.005	.013	-.003	-.042	.016	.046	.001	-.063	-.001	.022
146	.065	.226	-.034	.037	.038	.134	.064	.024	.015	-.084	.012	-.053	.028	.011	-.017	-.078	.140	.005	.083	.073	.019	.052	.081	.031	.041	-.016	-.067	-.026	-.024	.759	-.084	.028	-.033	.042	-.001	-.121	.041	.025
147	.158	.162	.034	-.082	-.254	-.087	-.158	.011	-.082	.110	-.069	-.050	.035	.075	-.060	-.092	-.012	-.093	.070	-.148	.042	.148	-.056	-.042	-.010	.194	-.171	.066	-.115	-.484	.321	.158	.150	.169	.019	.103	.007	.046
148	-.062	.216	-.047	-.135	.077	.182	.218	.169	.016	.014	-.170	-.058	-.016	.145	-.270	-.025	-.067	-.002	.041	.068	-.082	-.043	-.088	-.054	.059	-.024	.049	.005	.038	.580	.012	-.126	.126	.066	-.058	-.035	.056	.050
149	-.062	-.021	.035	-.146	-.153	-.026	-.005	-.052	-.078	-.053	-.059	.055	-.025	.032	-.760	-.026	-.046	.022	.033	-.009	-.047	.045	.052	.037	.047	-.002	.000	.090	-.002	.035	.056	.011	-.016	-.026	.002	.087	.000	-.006
150	.064	.155	.420	.037	-.434	.104	.24[illegible]	-.017	-.136	.007	-.123	.041	.340	.073	-.053	.021	.015	.167	-.002	.034	-.087	.097	-.041	.021	-.050	.102	.063	.022	.114	.076	.014	.044	.069	-.037	.034	.196	-.052	-.022
151	.100	-.187	-.022	.004	-.056	-.153	-.750	-.004	-.056	-.020	.092	.008	-.061	-.090	.004	.024	-.011	-.167	-.086	-.027	.168	-.061	-.046	-.013	-.094	.020	-.004	-.010	-.004	-.232	.072	-.144	.018	-.014	.001	.125	.003	-.006
152	-.118	.120	-.056	-.064	-.090	.084	.013	.074	.015	.014	-.087	.032	-.073	-.002	-.031	-.712	.028	-.040	-.038	.039	.075	.060	.087	.059	.029	.017	.021	-.114	.004	.104	-.086	-.122	.012	.048	.000	-.096	.000	.013
155	.006	-.050	.217	.023	-.112	-.021	.237	-.132	-.091	.054	-.233	-.032	.201	.068	-.076	-.029	-.028	.046	-.007	.012	-.068	.077	-.030	-.024	-.053	-.020	.014	.022	.016	.098	.043	.726	.102	.083	-.004	.204	-.006	-.024
156	.042	-.125	.078	-.069	-.178	-.194	-.002	.021	-.068	.084	-.048	-.007	.108	-.081	.054	.236	-.117	-.100	-.060	.006	-.072	-.050	-.089	-.017	-.051	-.020	.011	.197	.065	-.207	.150	.673	.033	.064	.010	.065	-.002	.007
159	.091	-.124	.085	-.007	-.433	-.179	-.071	-.068	-.020	-.096	.015	-.023	.049	.128	.004	.097	-.129	-.157	-.118	-.075	.052	-.056	-.156	-.049	.136	.036	.047	-.014	-.302	.013	-.060	.503	.015	.041	-.015	.078	.023	-.020
160	-.015	.075	-.083	-.161	.008	.120	.020	.141	.009	-.009	.109	.371	-.147	-.052	-.041	.031	.084	.261	-.001	.040	-.058	-.017	.114	-.085	-.051	.054	.015	-.078	.004	.049	-.066	-.245	-.544	-.038	-.001	-.124	-.008	-.004
161	.353	-.054	.035	.078	-.393	-.245	.029	.061	-.179	.089	-.096	.185	.150	-.015	-.061	.089	-.047	-.139	-.163	-.017	-.106	-.044	.183	.078	-.225	.045	-.027	.048	.078	-.454	.131	.073	.004	.090	-.076	.264	.058	-.045
Variance	1.659	4.834	1.256	1.850	3.524	3.040	1.013	1.313	1.120	.971	1.177	1.211	1.216	1.059	1.016	.969	.962	1.112	.871	.571	.987	1.125	1.022	.878	.944	.447	.448	1.102	.221	2.846	1.053	1.852	.467	.811	.067	2.271	.215	.416
% of Tot. V	2.676	7.797	2.032	2.983	5.685	4.904	1.634	2.118	1.806	1.567	1.898	1.953	1.961	1.708	1.638	1.563	1.552	1.794	1.406	.921	1.591	1.814	1.648	1.416	1.522	.721	.722	1.777	.356	4.590	1.699	2.987	.754	1.308	.109	3.663	.347	.671
% of Com V	3.394	9.888	2.577	3.783	7.209	6.219	2.071	2.686	2.290	1.986	2.407	2.477	2.4[illegible]	2.166	2.078	1.982	1.968	2.275	1.782	1.167	2.018	2.300	2.090	1.796	1.930	.914	.916	2.254	.451	5.820	2.154	3.788	.956	1.659	.138	4.646	.440	.851

AL SERVICES IN 104 WISCONSIN SCHOOL DISTRICTS

	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	
[illegible]	-.043	-.022	-.035	.052	.013	-.116	.720	.093	.015	.036	-.002	.069	-.021	-.049	.007	.003	-.005	-.002	-.006	80
[illegible]	.079	-.066	-.015	.161	.042	-.110	.038	.183	-.080	-.198	.001	.076	-.139	-.238	-.032	-.010	.079	.003	-.045	82
.1	-.092	-.001	.044	.100	.067	-.104	-.001	.065	-.017	-.075	-.031	.097	.019	-.023	.035	.005	.011	-.008	-.009	85
[illegible]	-.014	.022	.128	-.050	-.022	.015	-.089	-.141	.097	-.043	-.012	-.163	.174	.078	.029	.047	.060	.002	-.043	86
.5	.034	.066	-.031	.079	-.202	-.134	.053	.085	.058	.052	.082	.107	.046	.035	-.138	.051	-.027	-.005	-.029	88
[illegible]	-.092	-.022	.002	-.042	.010	.115	-.020	-.115	-.033	-.060	.001	-.041	-.001	-.021	-.003	.027	-.009	.000	-.001	89
[illegible]	.013	-.019	.005	-.043	.009	.058	-.015	-.056	-.068	.050	.000	-.144	-.006	.008	-.002	-.024	.019	-.001	.000	90
.3	.082	-.013	-.031	.013	-.002	.115	.012	-.039	-.013	-.038	.001	-.042	-.013	.009	.000	-.031	-.005	.000	.004	91
-.6	.072	-.035	-.005	.015	.002	.075	.112	.019	.068	.072	-.003	-.108	-.002	.009	.005	-.025	-.012	-.012	-.002	92
.3	-.025	.019	.004	-.035	.008	-.035	.000	-.083	-.036	-.015	.000	-.022	.002	-.006	-.000	.011	.008	.000	.000	93
-.5	.131	-.493	-.014	-.015	.015	.101	.118	.087	.109	-.126	.008	.003	.018	.067	-.009	-.026	.004	.007	.006	94
.2	.006	.062	-.076	.089	-.011	-.126	-.032	-.027	.118	-.237	.048	-.213	-.018	-.053	-.152	.139	-.171	.050	.034	95
[illegible]	-.031	-.097	.039	-.090	-.079	.052	.006	-.012	.039	-.018	.051	.010	-.059	.055	-.023	-.011	.028	-.003	.016	99
.14	.029	-.041	.015	.063	.006	-.039	-.068	.006	-.021	-.642	-.001	.090	.001	.001	.001	-.002	-.022	.000	.000	100
[illegible]	.032	-.054	.066	-.117	-.005	-.044	.079	.095	.053	-.084	.000	.000	.001	-.009	.011	.028	.017	-.012	-.003	101
[illegible]	.161	.065	-.022	.054	.083	.024	-.032	.031	-.099	-.137	-.054	.058	.058	-.035	.028	-.002	-.031	.001	-.016	102
.48	.252	.082	-.118	-.203	-.065	.359	-.079	-.158	.057	-.019	.053	-.124	-.002	-.071	-.102	.026	.006	.022	.046	103
[illegible]	-.028	-.040	-.056	.225	.067	-.415	.062	.080	.069	.006	-.042	.228	.167	-.073	.018	-.014	-.010	.106	-.038	105
-.44	-.150	-.076	.104	-.009	-.094	-.137	.391	.191	.040	.053	.022	.289	.233	.228	.006	-.013	.002	-.012	.025	106
-.62	-.706	.039	.003	-.087	.008	-.087	.066	.020	-.024	.022	.001	.249	.001	.000	.001	-.015	.001	.001	.000	107
.42	-.065	-.005	.007	-.768	.001	.092	-.044	-.109	-.029	.043	-.002	-.064	.001	.037	-.002	.006	.023	.001	.000	108
12	.085	.024	.009	-.018	.020	.030	-.068	-.166	-.020	.046	.006	-.187	-.011	-.007	.006	.038	.000	.004	-.006	111
.44	.056	-.045	-.007	.152	-.028	-.554	.006	-.099	.006	-.030	-.023	.015	.184	.023	.063	.093	.025	-.033	-.000	112
.46	-.023	.029	.035	.015	.008	-.065	-.015	.004	-.008	.076	-.038	-.012	.096	.015	-.072	-.018	-.054	.035	.054	119
.034	-.072	-.007	-.007	.053	.035	-.048	.030	.114	.023	-.011	.015	.020	.024	-.040	.144	-.047	.129	-.072	.006	120
00	.210	-.110	-.008	-.065	-.053	-.042	.011	-.072	-.017	-.173	-.040	.104	-.071	.005	.016	-.018	-.099	-.092	-.051	121
.106	-.063	.119	-.110	-.014	-.208	.072	.038	.118	-.030	-.027	-.008	.069	-.021	.078	-.017	.062	.032	.141	.005	122
.162	-.041	.026	-.057	.053	-.009	-.155	.056	.079	-.009	-.049	.000	.215	-.003	-.005	.006	.032	-.005	-.003	-.003	123
.172	-.151	.031	.023	.076	-.016	-.145	.040	.106	.034	-.138	.054	.729	-.034	-.121	.000	.004	-.013	.016	.004	124
.177	-.054	.013	-.162	.000	.010	-.246	.082	.080	.019	.005	.048	.146	.007	-.106	.024	.041	.067	.009	-.079	125
.10	.069	.024	.003	-.025	-.019	-.117	.000	-.093	-.012	-.004	.002	.145	.005	-.061	.013	.416	.056	.002	-.001	126
39	-.047	.015	.016	.045	-.005	.017	-.007	.025	-.028	.002	.000	-.018	-.002	-.006	.001	.000	-.012	.000	-.001	127
62	-.026	-.001	.044	-.044	.003	.040	.020	-.001	.008	.041	.002	.152	-.001	.008	.000	.016	.022	-.001	-.002	128
31	-.048	.015	-.035	-.119	.012	.089	-.037	-.241	-.062	.062	.006	-.113	-.002	.007	.007	.013	-.024	.002	-.005	129
13	-.018	-.024	.013	-.017	-.005	.040	-.039	.021	.016	.016	.000	.009	-.001	.006	.004	.000	.004	.000	-.001	130
078	-.078	-.072	.041	-.047	-.004	-.226	.013	.136	.059	.045	-.002	.405	.017	.100	-.014	.002	.030	.020	.037	131
028	-.110	-.024	-.004	.034	.004	-.111	.089	.117	.026	.013	-.042	.799	.019	.070	.004	.032	.019	-.014	-.010	132
054	.016	-.017	-.521	.027	.010	.043	.094	-.100	.019	.029	-.001	-.037	-.009	-.011	-.001	-.001	-.031	-.003	.000	133
117	.038	.003	-.031	-.030	-.001	-.012	-.003	.083	.005	-.025	-.001	.041	-.003	-.024	-.002	.017	.011	.001	.001	134
060	-.166	.246	.135	-.030	.047	-.237	.102	.031	.053	.206	-.068	.234	.064	.026	-.023	-.050	.042	.007	.048	135
079	-.059	.011	-.021	-.148	.002	-.073	.032	.100	-.047	.184	-.138	.233	.055	-.047	.110	-.105	.245	.034	-.003	136
059	-.088	.005	-.022	-.017	.000	.010	.024	.136	.038	-.005	-.002	.068	.000	.022	.005	.015	.011	.001	.001	137
108	.008	-.004	.074	-.300	.006	.092	.079	.125	.028	.112	.017	.035	-.007	-.042	.008	-.058	.411	-.002	.001	138
-.025	-.024	.039	.004	.075	.026	-.248	.058	.067	-.010	.020	.003	.065	.019	.013	.257	.062	.020	.004	.004	139
-.041	.000	.066	-.005	.203	-.018	-.225	.121	.066	.020	.021	.001	.026	.007	-.439	.005	.052	.021	-.004	.008	140
.009	-.074	.028	-.003	-.090	-.024	-.039	-.028	.028	-.002	-.032	.016	.068	-.015	-.028	.002	.012	.011	.004	-.002	141
-.005	-.083	-.021	-.017	.045	.030	-.048	.045	.034	.086	-.080	-.009	-.010	-.019	-.048	-.038	.004	.033	.014	.012	142
.023	.002	.032	.057	.072	-.005	-.125	.243	.084	-.041	-.013	.010	.157	.037	.057	-.154	-.034	.020	-.021	.019	143
-.076	-.022	-.034	.040	.091	-.013	-.369	.029	.016	.035	-.023	.001	.054	-.009	-.017	.005	.015	-.016	.000	.000	144
-.030	.007	.025	.015	.002	-.005	.013	-.003	-.042	.016	.046	.001	-.063	-.001	.022	.001	.018	-.014	.000	.000	145
.031	.041	-.016	-.067	-.026	-.024	.759	-.084	.028	-.033	.042	-.001	-.121	.041	.025	.004	-.006	-.048	-.013	-.020	146
-.042	-.010	.194	-.171	.066	-.115	-.484	.321	.158	.150	.169	.019	.103	.007	.046	-.040	-.019	-.080	.084	.024	147
-.054	.059	-.024	.049	.005	.038	.580	.012	-.126	.126	.066	-.058	-.035	.056	.050	.038	-.002	.120	.064	.042	148
.037	.047	-.002	.000	.090	-.002	.035	.056	.011	-.016	-.026	.002	.087	.000	-.006	-.002	.003	.012	-.003	-.002	149
.021	-.050	.102	.063	.022	.114	.076	.014	.044	.069	-.037	.034	.196	-.052	-.022	.089	-.112	.101	.034	-.031	150
-.013	-.094	.020	-.004	-.010	-.004	-.232	.072	-.144	.018	-.014	.001	.125	.003	-.006	.000	.026	-.013	.002	.002	151
.059	.029	.017	.021	-.114	.004	.104	-.086	-.122	.012	.048	.000	-.096	.000	.013	-.006	-.028	.020	.000	.001	152
-.024	-.053	-.020	.014	.022	.016	.098	.043	.726	.102	.083	-.004	.204	-.006	-.024	.092	-.101	.013	-.048	-.065	155
-.017	-.051	-.020	.011	.197	.065	-.207	.150	.673	.033	.064	.010	.065	-.002	.007	-.089	[illegible]	.026	.054	.067	156
-.049	.136	.036	.047	-.014	-.302	.013	-.060	.503	.015	.041	-.015	.078	.023	-.020	.001	.042	-.001	.002	.003	159
-.085	-.051	.054	.015	-.078	.004	.049	-.066	-.245	-.544	-.038	-.001	-.124	-.008	-.004	-.002	.005	-.006	.001	.001	160
.078	-.225	.045	-.027	.048	.078	-.454	.131	.073	.004	.090	-.076	.264	.058	-.045	.055	-.007	.031	-.030	-.009	161
.878	.944	.447	.448	1.102	.221	2.846	1.053	1.852	.467	.811	.067	2.271	.215	.416	.224	.279	.356	.072	.040	Variance
1.416	1.522	.721	.722	1.777	.356	4.590	1.699	2.987	.754	1.308	.109	3.663	.347	.671	.361	.450	.575	.116	.064	% of Tot. V
.796	1.930	.914	.916	2.254	.451	5.820	2.154	3.788	.956	1.659	.138	4.646	.440	.851	.458	.571	.729	.147	.081	% of Com V

94	Pupils per teacher, K-8	-.226
103	Percent of teachers with less than four years professional preparation	-.317

It is apparent that programs for educable mentally handicapped pupils are associated with school systems with above-average expenditures for current operation of their elementary schools. The factor is directly related to level of teacher salary and of professional preparation of the teaching staff. Educational programs for trainable mentally handicapped children tend to be associated with programs for educable mentally handicapped children. Furthermore, the factor is inversely related to pupil-teacher ratios in the elementary school and to percent of teachers with less than four years of professional preparation. In general, this factor appears to describe conditions associated with the presence of special programs for educable mentally handicapped children.

Factor B-2. -- This factor describes average size of high school classes. It accounts for 7.8 percent of the total variance and 9.9 percent of the common variance. It should be noted that this factor accounts for more of the variance associated with these variables than does any other factor. The following variables correlate significantly with Factor B-2:

	Variable	Correlation
120	Average size of high school mathematics classes	.816
121	Average size of high school social studies classes	.748
119	Average size of high school English classes	.743
122	Average size of high school science classes	.732
95	Pupils per teacher, 9-12	.675
125	Average size of high school vocational classes	.612
82	Total non-resident A. D. M.	.440
123	Average size of high school foreign language classes	.347
100	Pupils per administrator, 9-12	.310
101	Pupils per special service personnel, K-12	.309
144	Expenditure per pupil for remedial speech instruction	.257
105	Percent of teachers with five years professional preparation	.230
94	Pupils per teacher, K-8	.228
126	Average size of high school physical education classes	.212
143	Expenditure per pupil for education of the deaf and hard of hearing	.190
151	Expenditure per capita for public libraries	.187
103	Percent of teachers with less than four years professional preparation	-.189
148	Expenditure per pupil in A. D. M. for school lunch	-.216
135	Expenditure per pupil for current operation, elementary	-.217
146	Expenditure per pupil in A. D. M. for transportation	-.226
138	Expenditure per pupil for secondary school library books, materials and supplies	-.335
136	Expenditure per pupil for current operation, secondary	-.524

Factor B-2 is closely associated with high school class size in mathematics, social studies, English, and science and is also quite closely related to high school class size in vocational subjects and foreign languages. As would be expected, the factor is closely related to secondary school pupil-teacher ratio and moderately correlated with secondary school pupil-administrator ratio. The slight correlation between Factor B-2 and size of high school physical education classes indicates that the latter is not closely related to class size in other curricular areas. The inverse relationship of Factor B-2 to expenditures for school lunch, transportation, and secondary school libraries indicates that increased expenditures for these items are associated with lower class size. The slight correlation between this factor and elementary school pupil-teacher ratio suggests that school systems which have a relatively low secondary school pupil-teacher ratio will also have small elementary school classes. Class size is also associated with teacher preparation. The factor is directly related to percentage of teachers with five years of professional preparation and inversely related to percentage of teachers with less than four years of professional preparation. This relationship may be due to the fact that teachers who have five years of preparation are more numerous in large school systems, while teachers with less than four years of preparation are more likely to be in rural school systems. Lower average high school class sizes in rural school systems would be anticipated, since it is often necessary for small high schools to maintain classes which have relatively low enrollments if they are to provide a balanced educational program. The negative correlation between expenditures per pupil for current operation of secondary schools and Factor B-2 is expected since as class size decreases, expenditure per pupil for current operation will necessarily increase.

Factor D-2. -- This factor describes administrative staffing and accounts for three percent of the total variance and 3.8 percent of the common variance. The following variables correlate significantly with Factor D-2:

	Variable	Correlation
99	Pupils per administrator, K-8	.852
102	Teachers per administrator, K-12	.838
100	Pupils per administrator, 9-12	.256

This factor is quite simple, describing administrative staff as reflected by pupil-administrator ratio in grades K-8 and teacher-administrator ratio in grades K-12. The relative uniformity of staff in elementary schools which have self-contained classrooms undoubtedly influences the teacher-administrator ratio on a system-wide basis. The close correlation between pupils per administrator in grades K-8 and teachers per administrator in grades K-12 is at least partially explained by this relationship. The relatively low correlation between pupils per administrator in grades 9-12 and Factor D-2 is indicative of the greater complexity of administrator and teacher staff in the typical secondary school. The typical elementary school will have one administrator for the school and one teacher for each classroom. The typical secondary school will have a number of staff members who function in full-time or part-time administrative capacities as well as a wide variety of teaching positions.

Factor E-2. -- This factor is relatively important, accounting for 5.7 percent of the total variance and 7.2 percent of the common variance. It describes pupil ability as measured by a standard intelligence test. The following variables correlate significantly with Factor E-2:

	Variable	Correlation
85	Ratio of pupils in highest decile to total tested population	.838
88	Ratio of graduates attending four-year colleges to high school graduating class	.635
131	Percent of total high school enrollment in foreign language classes	.543
150	Expenditure per pupil for debt service	.434
159	Percent of 1960 population living in a different state in 1955	.433
161	Mean teacher salary, K-12	.383
135	Expenditure per pupil for current operation, elementary	.355
136	Expenditure per pupil for current operation, secondary	.323
106	Percent of teachers with over five years professional preparation	.304
105	Percent of teachers with five year professional preparation	.272
147	Expenditure per pupil for health and recreation	.254
132	Percent of total high school enrollment in fine arts courses	.257
112	Median years of total teaching experience, secondary staff	.244
156	Percent of 1960 population living abroad in 1955	.178
89	Ratio of graduates attending county teachers' colleges to high school graduating class	-.171
129	Percent of total high school enrollment in social studies courses	-.174
94	Pupils per teacher, K-8	-.267
86	Ratio of pupils in lowest decile to total tested population	-.501
133	Percent of total high school enrollment in vocational classes	-.540

While Factor E-2 is descriptive of pupil ability, it also sketches in broad outline some characteristics of school systems having high percentages of pupils of above-average academic ability. The pronounced inverse relationship between this factor and the ratio of pupils in the lowest decile is noteworthy, suggesting that schools which have a large percentage of pupils of high ability will have relatively few pupils with very limited academic ability. A high ratio of academically able pupils is accompanied by a high ratio of high school graduates attending four-year colleges and by heavier enrollment in high school foreign language and fine arts courses. Average teacher salaries are higher in school systems having a large number of high-ability pupils, as are expenditure per pupil for current operation of both elementary and secondary school programs. Such systems also tend to have a relatively large number of teachers with five or more years of professional preparation and a secondary school staff with substantial teaching experience. The moderate correlation between Factor E-2 and expenditure for debt service suggests that this factor is also associated with rapidly growing school systems, since such systems would have a relatively large amount of outstanding long-term debt.

Factor E-2 is inversely related to ratio of graduates who attend county teachers' colleges, percentage of the high school enrollment in social studies courses, pupil-teacher ratio in grades K-8, and percentage of high school enrollment in vocational courses. Apparently secondary school pupils of high academic ability seldom elect vocational courses and tend to elect fewer social studies courses. Instead, they give study of foreign languages high priority and also show a preference for fine arts courses. Their high school course of study is typically college preparatory.

Factor F-2. -- This factor describes special education programs for the physically handicapped. It accounts for 4.9 percent of the total variance and 6.2 percent of the common variance. The following variables correlate significantly with Factor F-2:

	Variable	Correlation
142	Expenditure per pupil for education of visually handicapped	.840
143	Expenditure per pupil for education of deaf and hard of hearing	.759
139	Expenditure per pupil for education requiring orthopedic services	.654
140	Expenditure per pupil for education of trainable mentally handicapped	.450
82	Total non-resident A. D. M.	.391
80	Total resident A. D. M.	.295
125	Average size of high school vocational classes	.266
161	Mean teacher salary, K-12	.245
112	Median years of total teaching experience, secondary teachers	.226
88	Ratio of graduates attending four-year colleges to high school graduating class	.206
156	Percent of 1960 population living abroad in 1955	.194
135	Expenditure per pupil for current operation, elementary	.193
144	Expenditure per pupil for remedial speech instruction	.192
105	Percent of teachers with five years of professional preparation	.191
95	Pupils per teacher, 9-12	.183
159	Percent of 1960 population living in a different state in 1955	.179
124	Average size of high school fine arts classes	.168
129	Percent of total high school enrollment in social studies classes	-.172
108	Percent of secondary teachers who are male	-.176
148	Expenditure per pupil for school lunch	-.182
103	Percent of teachers with less than four years of professional preparation	-.226

Factor F-2 describes programs of education for the visually handicapped, deaf and hard of hearing, and children requiring orthopedic services. To a lesser degree it describes programs of special education for trainable mentally handicapped. The direct relationship between this factor and both non-resident and resident A. D. M. inidcates that such programs are associated with school districts having large enrollments. School districts in urban centers would have a large total resident A. D. M. and also could be expected to serve a number of handicapped pupils from adjacent areas on a tuition basis. Average teacher salary and total teaching experience, both of which are slightly correlated with this factor, are also associated to some extent with large urban school systems. The factor also shows slight correlation with population mobility as reflected by percent of the population living abroad five years previously and percent of the population living in a different state five years previously. The factor's slight positive correlation with elementary school expenditures for current operation may be due in part to the additional costs associated with special educational programs which are not directly allocated to the programs. The inverse relationship between Factor F-2 and percent of teachers with less than four years of professional preparation lends support to the view that special education programs are associated with large urban school systems which typically employ few teachers who do not hold a college degree.

Factor DD-2. -- This factor, which describes expenditures for pupil transportation, accounts for 4.6 percent of the total variance and 5.8 percent of the common variance. The following variables correlate significantly with Factor DD-2:

	Variable	Correlation
146	Expenditure per pupil in A. D. M. for transportation	.759
148	Expenditure per pupil for school lunch	.580
103	Percent of teachers with less than four years of professional preparation	.359
156	Percent of 1960 population living abroad in 1955	-.207
140	Expenditure per pupil for education of trainable mentally handicapped	-.225
131	Percent of total high school enrollment in forein language courses	-.226
151	Expenditure per capita for public libraries	-.232
135	Expenditure per pupil for current operation, elementary	-.237
125	Average size of high school vocational classes	-.246
139	Expenditure per pupil for programs requiring orthopedic services	-.248
144	Expenditure per pupil for remedial speech instruction	-.369
105	Percent of teachers with five years of professional preparation	-.415
161	Mean teacher salary, K-12	-.454
147	Expenditure per pupil in A. D. M. for health and recreation	-.484
112	Median years of total teaching experience, secondary teachers	-.554

Although Factor DD-2 describes school district expenditures for pupil transportation, it also identifies some characteristics of rural school systems. Relatively large expenditures for pupil transportation are required in most rural school systems, as are comprehensive school lunch programs, since many pupils are unable to return home for the noon meal. Also, rural school systems tend to have a higher percentage of teachers who do not hold college degrees. The variables which correlate negatively with Factor DD-2 add to this picture. Rural school systems, because of their limited enrollments, would not be expected to offer extensive programs of special education. Neither would they be expected to have large expenditures for public libraries or substantial expenditures for health and recreation programs for pupils.

The relationship of variables to Factor DD-2 suggests that school systems with relatively large expenditures for pupil transportation will have a lower percentage of high school pupils engaged in foreign language study, lower expenditure per pupil for current operation of elementary schools, smaller high school vocational classes, relatively few teachers with five years of professional preparation, a decidedly lower average teacher salary, and a relatively inexperienced staff of secondary school teachers.

Factor FF-2. -- This factor describes population mobility. It accounts for 1.7 percent of the total variance and 2.2 percent of the common variance. The following variables correlate significantly with Factor FF-2:

	Variable	Correlation
155	Percent of 1960 population living elsewhere in U. S. in 1955	.726
156	Percent of 1960 population living abroad in 1955	.673
159	Percent of 1960 population living in a different state in 1955	.503
106	Percent of teachers with over five years of professional preparation	.191
82	Total non-resident A. D. M.	.183
111	Median years of total teaching experience, elementary teachers	-.166
129	Percent of total high school enrollment in social studies classes	-.241
160	Ratio of A. D. M. to gross enrollment	-.245

Factor FF-2 most closely describes population movement within the United States as a whole, but it also tends to describe movement from other countries to the United States as well as movement among states. The slight correlation between this factor and percent of teachers with over five years of professional preparation seems to indicate a tendency for population movement to be more pronounced in urban areas, since teachers with over five years preparation tend to be concentrated in urban and suburban school systems. The slight correlation with non-resident A. D. M. may be a product of the city-to-suburb movement, since new suburbs may not have fully developed school systems and as a result send pupils to adjacent school districts on a tuition basis. The negative correlation between ratio of A. D. M. to gross enrollment and Factor FF-2 indicates that this broad measure of pupil mobility has some validity. However, its correlation with the factor is far from perfect and it fails to yield information as to the nature of the pupils who are involved in movement among schools. The inverse relationship between Factor FF-2 and percent of total high school enrollment in social studies classes lends support to the conclusion that mobility affects urban areas more than rural areas, since it had previously been noted that urban school systems have a lower percentage of their high school students enrolled in social studies classes.

Factor JJ-2. -- This factor, which accounts for 3.7 percent of the total variance and 4.6 percent of the common variance, describes a particular aspect of the high school curriculum--the fine arts curriculum. The following variables correlate significantly with Factor JJ-2:

	Variable	Correlation
132	Percent of total high school enrollment in fine arts classes	.799
124	Average size of high school fine arts classes	.729
131	Percent of total high school enrollment in foreign language classes	.405
106	Percent of teachers with over five years of professional preparation	.289
161	Mean teacher salary, K-12	.264
107	Percent of elementary teachers who are males	.249
135	Expenditure per pupil for current operation, elementary	.234
136	Expenditure per pupil for current operation, secondary	.233
105	Percent of teachers with five years of professional preparation	.228
123	Average size of high school foreign language classes	.215
155	Percent of 1960 population living elsewhere in U. S. in 1955	.204
150	Expenditure per pupil for debt service	.196
86	Ratio of pupils in lowest decile to total tested population	-.163
111	Median years of total teaching experience, elementary teachers	-.187
95	Pupils per teacher, 9-12	-.213

This factor describes enrollment and class size in the high school fine arts curriculum. Enrollment in foreign language is also associated with this factor and size of foreign language classes is slightly correlated with it. School systems in which there is a relatively large enrollment in fine arts apparently spend more for current operation of their elementary and secondary schools, have relatively large numbers of teachers with five or more years of professional preparation, pay higher salaries to their teachers, have a higher percentage of male teachers on their elementary teaching staff, and have a somewhat more mobile population. The relationships within Factor JJ-2 indicate that pupils of low academic ability are less inclined to elect fine arts courses and that the secondary school pupil-teacher ratio is lower in school systems where more pupils elect fine arts courses.

Specific Factors

Twenty-nine specific factors, i.e., factors having $r \geq \pm .40$, with only one variable, were identified. They account for 42.22 percent of the total variance and 53.54 percent of the variance accounted for by the 43 factors.

Factor C-2. -- This factor describes the total teaching experience of the elementary school staff. It accounts for two percent of the total variance and 2.6 percent of the common variance. The following variables correlate significantly with Factor C-2:

	Variable	Correlation
111	Median years of total teaching experience, elementary teachers	.786
112	Median years of total teaching experience, secondary teachers	.231

132	Percent of total high school enrollment in fine arts classes	-.199
155	Percent of 1960 population living elsewhere in U. S. in 1955	-.217
125	Average size of high school vocational classes	-.226
150	Expenditure per pupil in A. D. M. for debt service	-.420

The relatively slight correlation between total teaching experience of the secondary school staff and Factor C-2 is noteworthy. In terms of teaching experience elementary and secondary school staffs are apparently dissimilar. The relationship of variables to Factor C-2 suggests that school systems which have a large number of experienced elementary teachers have lower high school enrollments in fine arts classes, a less mobile population, smaller high school vocational classes and relatively small expenditures for debt service. It appears that a school system with an experienced staff of elementary teachers is associated with a community which is stable both in terms of population mobility and school construction.

Factor G-2. -- This factor describes expenditures for public libraries. It accounts for 1.6 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor G-2:

	Variable	Correlation
151	Expenditure per capita for public libraries	.750
86	Ratio of pupils in lowest decile to total tested population	-.194
148	Expenditure per pupil in A. D. M. for school lunch	-.218
155	Percent of 1960 population population living elsewhere in U. S. in 1955	-.237
150	Expenditure per pupil in A. D. M. for debt service	-.245

Expenditures for public libraries are inversely related to school district expenditures for debt service. Factor G-2 also shows a slight inverse relationship with population mobility, expenditures for school lunch programs, and ratio of students of low academic ability.

Factor H-2. -- This factor accounts for 2.1 percent of the total variance and 2.7 percent of the common variance and describes staffing in "special subject areas". The following variables correlate significantly with Factor H-2:

	Variable	Correlation
101	Ratio of pupils to teachers in special fields, K-12	.795
94	Pupils per teacher, K-8	.380
103	Percent of teachers with less than four years of professional preparation	.278
95	Pupils per teacher, 9-12	.187
119	Average size of high school English classes	.168
148	Expenditure per pupil in A. D. M. for school lunch	-.169
86	Ratio of pupils in lowest decile to total tested population	-.191
133	Percent of total high school enrollment in vocational classes	-.215

Teachers in "special subject areas" are defined as full-time and part-time staff members engaged in driver education, guidance, visual education, industrial arts, home economics, agriculture, business, physical education, vocal and instrumental music, art, and special programs for the handicapped. Factor H-2 is somewhat more closely related to pupil-teacher ratio in the elementary grades than to pupil-teacher ratio in the secondary grades, although both are correlated with the factor at a statistically significant level. The positive correlation between this factor and Variable 103 indicates that the ratio of pupils to special area teachers will be greater in school systems having a large percentage of teachers with less than four years of training, a condition associated with rural school systems. Factor H-2 is inversely related to the ratio of low-ability pupils and to enrollment in high school vocational classes, indicating that as enrollment in vocational classes and percentage of low-ability pupils increases, the ratio of pupils to special area teachers will decrease. This relationship is to be expected in view of the definition of special subject areas.

Factor I-2. -- This factor describes high school enrollment in physical education and accounts for 1.8 percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor I-2:

	Variable	Correlation
134	Percent of total high school enrollment in physical education	.749
126	Average size of high school physical education classes	.349
82	Total non-resident A. D. M.	.227
161	Mean teacher salary, K-12	.179
140	Expenditure per pupil for education of trainable mentally handicapped	.178
121	Average size of high school social studies classes	-.179

The average size of high school vocational classes increases as high school enrollment in physical education increases. High school enrollment in physical education is influenced by Wisconsin law, which requires that every high school student receive at least 150 minutes of instruction in physical education per week unless disqualified for medical reasons. Consequently, the relationship of enrollment in physcial education to other secondary school curricular areas is somewhat clouded.

Factor J-2. -- This factor describes the extent to which high school graduates enroll in business or technical schools after completing high school. It accounts for 1.6 percent of the total variance and two percent of the common variance. The following variables correlate significantly with Factor J-2:

	Variable	Correlation
91	Ratio of graduates attending business or vocational school to total high school graduating class	.755
86	Ratio of pupils in lowest decile to total tested population	.338
126	Average size of high school physical education classes	-.211

The relationship of variables to Factor J-2 indicates a tendency for graduates of high schools in which a relatively large percentage of the student body is composed of pupils of low academic ability to secure additional formal education at a business or vocational school following completion of high school. The inverse relationship between this factor and average size of high school physical education classes is difficult to explain.

Factor K-2.-- This factor describes expenditures for elementary school library books, materials and supplies. It accounts for 1.9 percent of the total variance and 2.4 percent of the common variance. The following variables correlate significantly with Factor K-2:

	Variable	Correlation
137	Expenditure per pupil for elementary school library books, materials and supplies	.800
138	Expenditure per pupil for secondary school library books, materials and supplies	.395
155	Percent of 1960 population living elsewhere in U. S. in 1955	.233
148	Expenditure per pupil in A.D. M. for school lunch	.170

Factor K-2 is also associated with expenditure for secondary school libraries. School systems which provide liberal financial support for elementary school libraries also provide substantial support for their secondary school libraries. The factor also shows a slight positive correlation with population mobility and expenditures for school lunch.

Factor L-2. -- This factor describes high school dropouts. It accounts for 1.9 percent of the total variance and 2.5 percent of the common variance. The following variables correlate significantly with Factor L-2:

	Variable	Correlation
92	Ratio of dropouts to enrollment in grades 9-12	.767
103	Percent of teachers with less than four years of professional preparation	.358
94	Pupils per teacher, K-8	.182
126	Average size of high school physical education classes	-.183
161	Mean teacher salary, K-12	-.185
160	Ratio of A. D. M. to gross enrollment	-.371

It is apparent that the level of professional preparation of the teaching staff is definitely associated with school dropouts. The relationship of variables to Factor L-2 indicates that districts which have a high percentage of teachers who do not have a college degree will have more dropouts. Average teacher salary is inversely related to Factor L-2, indicating that systems having a higher average teacher salary will have fewer dropouts. Pupil-teacher ratio in the elementary school is also positively correlated with the factor. The inverse relationship between Factor L-2 and Variable 160 lends strong support to the conclusion that districts with a highly mobile student population have more dropouts. Conversely, the more stable the student body, the fewer dropouts the district will have.

Factor M-2. -- This factor describes secondary school enrollment in social studies. It accounts for two percent of the total variance and 2.5 percent of the common variance. The following variables correlate significantly with Factor M-2:

	Variable	Correlation
129	Percent of total high school enrollment in social studies classes	.732
106	Percent of teachers with over five years of professional preparation	.172
105	Percent of teachers with five years of professional preparation	-.188
155	Percent of 1960 population living elsewhere in U. S. in 1955	-.201
136	Expenditure per pupil,9-12	-.217
138	Expenditure per pupil for secondary school library books, materials and supplies	-.220
88	Ratio of graduates attending four-year college to total high school graduating class	-.288
150	Expenditure per pupil in A. D. M. for debt service	-.340

There is a slight positive correlation between percentage of teachers with over five years of professional preparation and percentage of the high school student body enrolled in social studies classes. Surprisingly, there is a slight negative correlation between percentage of teachers with five years of preparation and percentage of the high school student body enrolled in social studies classes. From Factor M-2, it would appear that high school enrollment in social studies classes will be lower in districts which have a relatively mobile population; which spend more for current operation and for secondary school libraries; which have a relatively large number of graduates attending four-year colleges; and districts which spend a substantial amount of money for debt service. The relationships within Factor M-2, as well as within factors previously identified, lead to the conclusion that students in a college preparatory high school curriculum tend to elect such courses as foreign language, science, and mathematics in preference to additional work in social studies.

Factor N-2. -- This factor describes high school enrollment in science classes. It accounts for 1.7 percent of the total variance and 2.2 percent of the common variance. The following variables correlate significantly with Factor N-2:

	Variable	Correlation
130	Percent of total high school enrollment in science classes	.819
122	Average size of high school science classes	.207
119	Average size of high school English classes	-.171
82	Total non-resident A. D. M.	-.214

The slight positive correlation between Factor N-2 and Variable 122 indicates a tendency for the size of high school science classes to increase as the percentage of the high school student body enrolled in such classes increases. Conversely, there is a slight negative correlation between this factor, size of high school English classes, and number of non-resident pupils.

Factor O-2. -- This factor accounts for 1.6 percent of the total variance and 2.1 percent of the common variance. It describes the cost per meal of school lunches. The following variables correlate significantly with Factor O-2:

	Variable	Correlation
149	Average cost of school lunch per meal served	.760
148	Expenditure per pupil in A. D. M. for school lunch	.270
136	Expenditure per pupil for current operation, secondary	.227

The relationship of variables to Factor O-2 are simple and straightforward. Expenditure per pupil for school lunch increases as the cost per meal increases. Furthermore, expenditure per pupil for current operation of secondary schools shows a slight positive correlation with Factor O-2. Since school funds are seldom unlimited, expenditures which support school lunch programs are likely to divert funds from other areas of the school program. To the extent which school district subsidize school lunch programs, support of other areas of the educational program is curtailed.

Factor P-2. -- This factor describes the extent to which the adult population exercises its privilege of voting. The factor accounts for 1.6 percent of the total variance and two percent of the common variance. The following variables correlate significantly with Factor P-2:

	Variable	Correlation
152	Percent of population age 21 and over voting in 1960 presidential election	.712
156	Percent of 1960 population living abroad in 1955	-.236
126	Average size of high school physical education classes	-.243

Variable 152 was included in the study in the hope that voter participation would show relationship to the educational program or to the level of financial support. This was not the case. As would be expected, Factor P-2 is inversely related to percent of the 1960 population living abroad in 1955. There is also an unexplained inverse relationship between this factor and size of high school physical education classes. Probably the relationship is due to the nature of school systems which have small physical education classes.

Factor Q-2. -- This factor is associated with attendance of high school graduates at county teachers' colleges. The factor accounts for 1.6 percent of the total variance and two percent of the common variance. The following variables correlate significantly with Factor Q-2:

	Variable	Correlation
89	Ratio of graduates attending county teachers' colleges to total high school graduating class	.769
99	Pupils per administrator, K-8	.139
126	Average size of high school physical education classes	.167
88	Ratio of graduates attending four-year colleges to total high school graduating class	-.183

As would be expected, Factor Q-2 is inversely related to the number of high school graduates attending a four-year college. The factor shows slight positive correlation with elementary school pupil-administrator ratio and with average size of high school physical education classes.

Factor R-2. -- This factor describes enrollment of high school graduates in a program of training for nurses. The factor accounts for 1.8 percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor R-2:

	Variable	Correlation
90	Ratio of graduates enrolled in nurse's training to total high school graduating class	.749
160	Ratio of A. D. M. to gross enrollment	.261
138	Expenditure per pupil for secondary school library books, materials and supplies	.217
150	Expenditure per pupil in A. D. M. for debt service	.167
151	Expenditure per pupil in A. D. M. for transportation	-.167
135	Expenditure per pupil for current operation, elementary	-.178
126	Average size of high school physical education classes	-.188

The relationship of variables to Factor R-2 suggests that high school graduates who enroll in a program of nurse's training come from school systems which have a relatively stable student body, which spend more money on elementary school libraries, and which have a heavier debt service burden. The factor is inversely related to expenditures for transportation, current operation of elementary schools, and size of high school physical education classes.

Factor S-2. -- This factor is associated with size of high school foreign language classes. The factor accounts for 1.4 percent of the total variance and 1.8 percent of the common variance. The following variables correlate significantly with Factor S-2:

	Variable	Correlation
123	Average size of high school foreign language classes	.654
131	Percent of total high school enrollment in foreign language classes	.356
125	Average size of high school vocational classes	.213
122	Average size of high school science classes	.208
161	Mean teacher salary, K-12	.163

This factor is also moderately correlated with total enrollment in foreign language classes. It shows slight positive correlation with average size of high school vocational and science classes, as well as with average teacher salary.

Factor T-2. -- This factor, which accounts for .9 percent of the total variance and 1.2 percent of the common variance, describes expenditures for remedial speech education. The following variables correlate significantly with Factor T-2:

	Variable	Correlation
144	Expenditure per pupil for remedial speech education	.568
131	Percent of total high school enrollment in foreign language classes	-.164

This factor is quite specific. There is a slight inverse relationship of the factor to percent of total high school enrollment in foreign language classes. This relationship may reflect less need for remedial speech instruction in school systems where a relatively large number of students elect foreign language.

Factor U-2. -- This factor describes cost of transportation per pupil. It accounts for 1.6 percent of the total variance and two percent of the common variance. The following variables correlate significantly with Factor U-2:

	Variable	Correlation
145	Cost of transportation per pupil transported	.756
151	Expenditure per capita for public libraries	.168
88	Ratio of graduates attending four-year colleges to total graduating class	.163
94	Pupils per teacher, K-8	-.170
140	Expenditures per pupil for education of trainable mentally handicapped	-.260

Cost of transportation, as used here, refers to the cost of transportation provided at public expense with school district funds. There is a slight positive correlation between Factor U-2, expenditures for public libraries, and ratio of high school graduates attending a four-year college. The factor is inversely related to elementary school pupil-teacher ratio and expenditures for education of trainable mentally handicapped children. Most importantly, Factor U-2 has no significant correlation with Variable 146 (expenditure for transportation per pupil in A. D. M.).

Factor V-2. -- This factor describes high school enrollment in mathematics courses and accounts for 1.8 percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor V-2:

	Variable	Correlation
128	Percent of total high school enrollment in math classes	.775
136	Expenditure per pupil for current operation, secondary	.251
138	Expenditure per pupil for secondary school library books, materials and supplies	.214
119	Average size of high school English classes	.176
144	Expenditure per pupil for remedial speech education	-.183
133	Percent of total high school enrollment in vocational classes	-.211
125	Average size of high school vocational classes	-.241

The relationship of variables to Factor V-2 indicates that enrollment in high school math classes is associated with higher expenditure for current operation of secondary schools and for secondary school libraries. The factor is slightly correlated with size of high school English classes. It is inversely related to high school enrollment in vocational classes, average size of high school vocational classes, and expenditures for remedial speech education.

Factor W-2. -- This factor describes enrollment in non-public schools. It accounts for 1.6 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor W-2:

	Variable	Correlation
93	Ratio of non-public to public school enrollment	.772
112	Median years of total teaching experience, secondary teachers	.229
105	Percent of teachers with five years of professional preparation	.191
161	Mean teacher salary, K-12	.183
103	Percent of teachers with less than four years of professional preparation	-.200

School districts in which a relatively high proportion of school-age children attend a non-public school have a secondary school staff with substantial teaching experience, a high percentage of teachers with five years of professional preparation, and a relatively high average teacher salary. School districts which have a relatively large number of teachers who do not hold a degree have fewer children of school age attending non-public schools. These relationships suggest that non-public schools are more typically associated with urban areas than with rural areas. The variables which are positively correlated with Factor W-2 are typical of urban school districts, while rural school districts employ more teachers with less than four years of professional preparation.

Factor X-2. -- This factor is associated with high school enrollment in English classes. It accounts for 1.4 percent of the total variance and 1.8 percent of the common variance. The following variables correlate significantly with Factor X-2:

	Variable	Correlation
127	Percent of total high school enrollment in English classes	.739
86	Ratio of pupils in lowest decile to total tested population	-.211

Enrollment in high school English classes apparently is influenced by the academic ability of the student body, since Factor X-2 is inversely related to the ratio of pupils possessing limited academic ability. However, no statistically significant correlation was found between enrollment in high school English classes and the ratio of pupils having high academic ability.

Factor Y-2. -- This factor describes percentage of male elementary teachers. The factor accounts for 1.5 percent of the total variance and 1.9 percent of the common variance. The following variables correlate significantly with Factor Y-2:

	Variable	Correlation
107	Percent of elementary teachers who are males	.706
161	Mean teacher salary, K-12	.225
135	Expenditure per pupil for current operation, elementary	.166
121	Average class size in high school social studies	-.210
103	Percent of teachers with less than four years of professional preparation	-.252

The relationship of variables to Factor Y-2 suggests that school systems which have a relatively high percentage of male elementary teachers pay higher teacher salaries, maintain a higher level of expenditure for current operation of elementary schools, and have relatively few teachers with less than four years of professional preparation. Factor Y-2 is inversely related to size of high school social studies classes. Again, this relationship is probably due to the nature of the community.

Factor Z-2. -- This factor is descriptive of elementary school pupil-teacher ratio, although the description is far from precise. The following variables correlate significantly with Factor Z-2:

	Variable	Correlation
94	Pupils per teacher, K-8	.493
147	Expenditure per pupil in A. D. M. for health and recreation	-.194
135	Expenditure per pupil for current operation, elementary	-.246

Factor Z-2 is inversely related to cost of current operation of elementary schools. It also has slight negative correlation with expenditures per pupil for health and recreation. Factor Z-2 is relatively unimportant, accounting for but .7 percent of the total variance and .9 percent of the common variance.

Factor AA-2. -- This factor is associated with high school enrollment in vocational subjects and accounts for only .7 percent of the total variance and .9 percent of the common variance. There is a slight positive correlation between Factor AA-2 and expenditures for pupil health and recreation. The following variables correlate significantly with Factor AA-2:

	Variable	Correlation
133	Percent of total high school enrollment in vocational subjects	.521
147	Expenditure per pupil in A. D. M. for health and recreation	.171

Factor BB-2. -- This factor describes number of male secondary school teachers and accounts for 1.8 percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor BB-2:

	Variable	Correlation
108	Percent of secondary teachers who are males	.768
138	Expenditure per pupil for secondary school library books, materials and supplies	.300
103	Percent of teachers with less than four years of professional preparation	.203
156	Percent of 1960 population living abroad in 1955	-.197
140	Expenditure per pupil for education of trainable mentally handicapped	-.203
105	Percent of teachers with five years of professional preparation	-.225

Factor BB-2 is moderately correlated with expenditures for secondary school libraries and shows a slight positive correlation with percent of teachers with less than four years of professional preparation. However, the factor is not significantly correlated with expenditures for current operation of secondary schools. The slight negative correlation between Factor BB-2 and percent of teachers with five years of preparation suggests that male teachers either do not secure a fifth year of professional training or, more likely, leave the profession. The factor is also inversely related to expenditures for education of trainable mentally handicapped children.

Factor EE-2. -- This factor describes total resident enrollment. It accounts for 1.7 percent of the total variance and 2.2 percent of the common variance. Large school systems apparently have a relatively high percentage of teachers with over five years of professional preparation, spend more per pupil for health and recreation, and spend more for education of pupils who are deaf or hard of hearing. The following variables correlate significantly with Factor EE-2:

	Variable	Correlation
80	Total resident A. D. M.	.720
106	Percent of teachers with over five years of professional preparation	.391
147	Expenditure per pupil in A. D. M. for health and recreation	.321
143	Expenditure per pupil for education of deaf and hard of hearing	.243

Factor GG-2. -- This factor describes pupil mobility. It accounts for .8 percent of the total variance and one percent of the common variance. Only Variable 160 (ratio of A. D. M. to gross enrollment), with r = .544, correlates with this factor at a statistically significant level.

Factor HH-2. -- This factor, which describes secondary school pupil-administrator ratio, accounts for 1.3 percent of the total variance and 1.7 percent of the common variance. The following variables correlate signficantly with Factor HH-2:

	Variable	Correlation
100	Pupils per administrator, 9-12	.642
95	Pupils per teacher, 9-12	.237
82	Total non-resident A. D. M.	.198
121	Average size of high school social studies classes	.173
147	Expenditure per pupil in A. D. M. for health and recreation	-.169
136	Expenditure per pupil for current operation, secondary	-.184
135	Expenditure per pupil for current operation, elementary	-.206

The relationship of variables to Factor HH-2 indicates that secondary school pupil-teacher and pupil-administrator ratios vary together. The factor also shows slight positive correlation with non-resident enrollment and with size of high school social studies classes. As would be expected, the factor is inversely related to expenditures for secondary school current operation. However, its inverse relationship to expenditure for current operation of elementary schools is of interest. It also has slight negative correlation with expenditures for pupil health and recreation programs.

Factor LL-2. -- This factor is most closely related to expenditures for education of trainable mentally handicapped children, although the correlation between Factor LL-2 and Variable 140 is relatively low. The factor accounts for .7 percent of the total variance and .9 percent of the common variance. The following variables correlate significantly with Factor LL-2:

	Variable	Correlation
140	Expenditure per pupil for education of trainable mentally handicapped	.439
82	Total non-resident A. D. M.	.238
106	Percent of teachers with over five years of professional preparation	-.228

Factor LL-2 has a slight positive correlation with total non-resident enrollment. This relationship would be expected, since such programs typically serve pupils from adjacent school districts on a tuition basis. The negative correlation between this factor and Variable 106 suggests that school districts which have a relatively large percentage of teachers with over five years of professional preparation tend to have lower per-pupil expenditures for such programs. It is logical that special education programs can be operated more efficiently by larger school districts, which have more teachers with a high level of preparation.

Factor NN-2. -- This factor accounts for but .4 percent of the total variance and .6 percent of the common variance. It is related to average size of high school physcial education classes, although its correlation with this variable is only .416. Only Variable 126 was found to have a significant correlation with Factor NN-2.

Factor OO-2. -- This factor is associated with expenditures for secondary school libraries. It accounts for .6 percent of the total variance and .7 percent of the common variance. The following variables correlate significantly with Factor OO-2:

	Variable	Correlation
138	Expenditure per pupil for secondary school library books, materials and supplies	.411
136	Expenditure per pupil for current operation, secondary	.245
95	Pupils per teacher, 9-12	-.171

It should be noted that Factor OO-2 is only moderately correlated with expenditure per pupil for secondary school libraries. The factor shows a slight positive correlation with expenditure per pupil for current operation of secondary schools. It has a slight negative correlation with secondary school pupil-teacher ratio.

Factors Destroyed by Rotation

After rotation of the factor matrix six factors did not have $r \geq \pm$ .40 with any variable. These six factors are relatively unimportant, accounting for a total of only 1.35 percent of the variance and 1.71 percent of the common variance.

Factor CC-2. -- Three variables were found to have significant correlation with Factor CC-2. Variable 159 (percent of 1960 population living in a different state in 1955) had r = .302; 122 (average size of high school science classes) had r = .208; and 88 (ratio of graduates attending a four-year college to total high school graduating class) had r = .202.

Factor KK-2. -- Four variables were found with significant correlation with Factor KK-2. Variable 106 (percent of teachers with over five years of professional preparation) was found to have r = .233; 112 (median years of total teaching experience, secondary teachers) was found to have r = .184; 86 (ratio of pupils in lowest decile to total tested population) was found to have r = .174; and 105 (percent of teachers with five years of professional preparation) was found to have r = .167.

Factor MM-2. -- Only Variable 139 (expenditure per pupil for education requiring orthopedic services) was found to have significant correlation with Factor MM-2, with r = .257.

Other factors. -- No statistically significant correlations were found between Factors II-2, PP-2, and QQ-2 and any of the 62 variables related to need for educational services.

Factor Analysis of a Combination of 70 Need and Ability Variables

Seventy variables, 26 related to ability to support education and 44 related to need for educational services, were combined and subjected to factor analysis. The limit of 70 variables imposed by the IMAGE program required that further selection be made from among the 40 ability variables and 62 need variables which remained. Consequently, 14 variables related to ability to support education and 18 variables related to need for educational services were eliminated. The fact that certain variables were eliminated in arriving at the 70 variables which would be subjected to further factor analysis does not imply these variables are of no importance. Many of the variables which were eliminated were found to be intimately associated with factors extracted in the analyses reported in the preceding sections and may be of significance in developing state support programs. The fact that such variables are closely associated with a particular factor suggests that if they are to be considered in measuring ability to support education or need for educational services, they must be considered specifically. It cannot be assumed that adequate consideration will be given these factors through the use of data provided by other variables. The 32 variables which were eliminated are identified below.

Variable 1 (population of school district) was eliminated on the basis of having r = .998 with Variable 80 (total resident A. D. M.). It was closely associated with Factor M-1. Variable 12 (percent of residential buildings owner occupied) was closely associated with Factor N-1. It also showed a slight negative correlation with Factors B-1 and M-1. Variable 29 (motor vehicles registered per family) was the only variable closely identified with Factor O-1 and is relatively specific for this factor. Variable 38 (municipal revenue per capita from all other tax sources) was closely correlated with Factor A-1 and moderately correlated with Factor C-1. This variable was miscellaneous in nature and the data were not directly comparable from one district to another. Variable 41 (municipal revenue per capita from fines and forfeitures) showed no high correlation with any factor, although moderate correlations were found with Factors A-1, M-1, and N-1. In view of the fact that municipal revenue from this source was generally quite limited, the variable was eliminated. Variable 47 (percent of total property tax delinquency) was eliminated because of the inaccuracy of the data. As previously indicated, delinquency reported included the unpaid portion of property taxes due on an installment basis. This variable was closely associated with Factor R-1 and is quite specific for this factor. Variables 52 (municipal disbursements per capita for welfare), 54 (municipal disbursements per capita for education), and 57 (unclassified municipal disbursements per capita) were closely associated with Factors S-1, P-1, and X-1, respectively. These three variables were judged to be of minor importance in the total support picture. Variables 59 (municipal debt service per capita), 61 (municipal long-term debt per capita), and 62 (municipal temporary loans outstanding per capita) were all quite closely related to Factor J-1. Very few statistically significant correlations were found between these variables and other factors. Variable 59 was closely related to Factor D-1, as were Variables 55 and 56, both of which were retained. Variable 64 (receipts per pupil from county sources) was closely associated with Factor U-1 and was relatively specific for this factor. Variable 68 (receipts per pupil from all other sources) was closely associated with Factor T-1 and moderately correlated with Factor C-1. This variable encompassed a multitude of revenue sources, making direct comparisons among districts difficult.

Variables 89 (ratio of high school graduates attending county teachers' college to high school graduating class), 90 (ratio of high school graduates attending nursing school to total high school graduating class), and 91 (ratio of high school graduates attending business or vocational school to total high school graduating class) were discarded and 88 (ratio of high school graduates attending four-year college to total high school graduating class) was retained as a measure of post-high school education. The three variables discarded were closely associated with Factors Q-2, R-2, and J-2, respectively. Variable 94 (pupils per teacher, K-8) was slightly or moderately correlated with Factors A-2, B-2, E-2, L-2, and H-2 and was relatively specific for Factor Z-2. It was found to have R = .907. Variable 101 (ratio of pupils to teachers in special fields, K-12) was found to have R = .929. This variable was relatively specific for Factor H-2 and was moderately correlated with Factor B-2. Variables 107 (percent of male elementary teachers) and 108 (percent of male secondary teachers) were relatively specific for Factors Y-2 and BB-2, respectively, and had no close correlation with other factors. Variables 123 (average size of high school foreign language classes) and 126 (average size of high school physical education classes) were eliminated and measures of class size in other subject areas were retained. Variable 123 was quite closely correlated with Factor S-2 and moderately correlated with Factor B-2. Variable 126 was moderately correlated with Factors I-2 and NN-2, but was not closely correlated with any factor. Variables 127 (percent of total high school enrollment in English classes), 129 (percent of total high school enrollment in social studies classes), and 134 (percent of total high school enrollment in physcial education classes) were eliminated.

These three variables were closely associated with Factors X-2, M-2, and I-2, respectively. A major consideration in eliminating them was the fact that election of these subject matter areas is to a large degree dictated by state statutes and/or strongly influenced by college entrance requirements. Therefore, it was decided to eliminate them in favor of variables expressing percent of high school enrollment in other curricular areas.

Variable 145 (expenditure per pupil transported) was eliminated in favor of 70 (expenditure for transportation per pupil in A. D. M.). Variable 145 was relatively specific to Factor U-2. Variable 149 (average cost per school lunch meal served) was discarded in favor of 148 (expenditure for school lunch per pupil in A. D. M.). Variable 149 was closely related to Factor O-2. Variable 152 (percent of population age 21 and over voting in the 1960 presidential election) was specific to Factor P-2. It had no statistically significant correlation with any other factor. Variables 155 (percent of 1960 population living elsewhere in the United States in 1955) and 156 (percent of 1960 population living abroad in 1955) were closely identified with Factor FF-2 and were slightly correlated with several other factors. However, since these two variables were rather broad measures of population mobility, they were eliminated in favor of 159 (percent of 1960 population living in a different state in 1955). Variable 160 (ratio of A. D. M. to gross enrollment) exhibited no high correlation with any factor. Moderate to slight correlations were found between this variable and Factors L-2, R-2, and FF-2. Its highest correlation was with Factor GG-2, for which it was specific.

The variables remaining after the screening described above were subjected to factor analysis and a total of 51 factors were extracted. These 51 factors accounted for 83.04 percent of the total variance associated with the 70 variables. The rotated factor matrix showing correlations between each factor and all variables will be found in Table 5.11.

General Factors

Twelve general factors, i.e., factors with which two or more variables were found to have r = ± .40, were identified. These 12 factors account for 45.65 percent of the total variance associated with the 70 variables and 54.32 percent of the variance accounted for by the 51 factors which were extracted.

Factor A-3. -- This is an exceedingly complex factor, having statistically significant correlations with 42 of the 70 variables under study. It accounts for nearly twice as much of the variance as is accounted for by any other single factor--11.81 percent of the total variance and 14.05 percent of the common variance. The following variables correlate significantly with Factor AA-3:

	Variable	Correlation
16	Net reported personal income tax per capita	.864
131	Percent of total high school enrollment in foreign languages	.805
4	Equalized valuation of residential property per capita	.773
85	Ratio of pupils in highest decile to total tested population	.733
65	Receipts per pupil from local taxes	.727
135	Expenditure per pupil for current operation, elementary	.655

TABLE 5.11
ROTATED FACTOR MATRIX OF 70 VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION AND NEED FOR EDUCATIONAL SERVICES IN 104 WISCONSIN SCHOOL DISTRICTS

	FACTORS																										
VAR.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
2	-.249	.002	-.034	.001	.022	.007	.012	.037	.019	.041	-.005	.007	-.046	-.842	-.006	-.005	.019	.087	-.009	-.001	-.021	-.015	-.012	-.004	-.018	.028	2
4	-.773	-.005	-.083	-.040	.028	.007	.120	.148	.036	.149	.013	.093	.057	-.362	.106	-.101	-.041	-.036	.041	.027	.086	-.181	-.068	-.041	.042	-.019	4
5	-.191	.112	.002	-.123	-.121	-.039	-.002	-.120	-.467	-.082	.029	.038	.328	-.101	-.126	.084	.101	.097	.119	-.150	-.104	.018	-.361	-.010	.173	-.006	5
7	.237	-.196	.014	-.020	-.071	-.114	-.066	-.001	.170	.068	-.087	-.709	-.143	.015	-.003	.112	-.041	.006	-.252	-.070	.009	-.013	.030	.021	.023	-.079	7
16	-.864	-.029	.026	-.007	.093	.038	.145	-.017	-.007	.004	.004	.099	.057	-.036	-.031	-.033	.045	-.146	.041	.051	.054	-.159	.043	.019	.133	-.045	16
17	-.088	.006	-.093	.002	.105	.165	.084	.000	-.096	.156	-.075	.114	-.067	-.153	-.019	-.017	-.018	.031	.093	-.019	-.039	.020	.009	.010	-.030	.042	17
27	-.643	.043	-.069	-.074	-.145	-.031	.081	.192	-.073	.152	.124	.060	-.043	.054	.078	-.037	-.034	-.059	.025	.125	.018	.100	-.146	-.009	.019	-.292	27
32	.019	-.197	.137	.016	.071	-.042	-.050	-.008	.052	-.146	.040	.051	.802	.066	.050	-.056	-.015	-.053	-.158	-.162	.048	.055	.017	.022	.063	-.009	32
33	.415	.155	-.043	.100	-.055	-.041	.054	-.005	-.180	-.299	.021	.075	-.078	.083	-.237	.039	.230	.064	.033	.069	-.096	-.082	-.104	-.002	.131	.109	33
34	-.199	-.238	-.128	-.058	.112	-.303	-.102	-.108	-.047	.194	.170	.055	.006	.096	.252	-.118	-.099	-.050	-.109	.090	.109	.016	-.011	-.034	-.060	-.010	34
39	-.202	-.017	-.025	-.048	.035	-.002	-.037	.793	.048	.109	.052	.076	.070	-.063	.280	-.085	.047	-.019	.122	.039	.007	-.058	-.038	-.031	.050	-.055	39
40	-.069	-.109	-.003	-.013	.160	.012	.086	.411	-.049	-.062	.193	.146	.056	-.020	.256	-.183	.006	-.019	-.006	-.083	.024	.016	.076	.038	.000	-.119	40
42	.382	-.167	.118	.026	.153	-.034	.139	-.046	-.117	-.173	.021	-.144	.093	.071	.000	.010	.059	-.103	-.128	-.014	-.047	.141	-.049	-.025	-.067	-.152	42
43	.102	-.104	-.026	-.051	-.052	-.048	-.003	.030	.055	-.053	-.034	-.087	-.098	.053	-.039	.044	.081	.057	-.084	-.068	.003	.033	.025	-.011	-.041	-.012	43
44	.055	.263	.068	.025	.150	.192	.082	.035	-.283	.085	-.006	.034	-.033	-.018	-.066	.144	.165	.008	.071	-.096	-.106	.022	-.672	.007	-.028	-.014	44
45	.194	.046	-.028	.099	-.032	.125	-.009	-.042	.128	-.010	-.068	-.047	-.053	.007	-.092	.838	.063	.080	.010	.073	.034	-.051	-.090	-.016	-.080	.032	45
49	-.067	-.137	-.013	-.005	.052	.038	.862	.045	.031	.105	.011	.006	-.031	.009	-.045	-.057	-.029	.051	-.004	.054	-.053	-.139	.020	.007	-.047	-.074	49
50	-.193	.079	-.077	.059	.061	-.021	.756	.093	-.217	-.051	-.022	.061	.007	.020	-.094	.051	-.022	-.064	.072	.033	-.074	.072	.006	.047	.122	.026	50
51	-.257	-.023	.037	-.025	-.064	-.043	.798	.062	.009	.010	-.022	.052	-.019	-.055	.190	.009	-.009	-.046	.081	.059	.055	-.023	-.095	-.031	.013	.022	51
53	.049	-.089	.034	-.093	.111	.199	.258	.719	.028	-.018	.016	-.109	-.076	-.025	-.055	.050	.021	-.050	-.057	-.029	-.002	.075	-.009	.057	.040	-.011	53
55	.013	.052	.013	.902	.013	.015	.010	-.071	-.054	-.066	.030	.026	-.011	-.016	-.029	-.090	.119	-.015	.061	.072	-.106	.016	-.009	-.013	-.018	.011	55
56	.146	.026	-.051	.780	.004	.032	.002	-.027	.089	.025	.053	.006	.032	.028	-.039	.487	.082	.066	-.045	.037	-.012	-.035	-.006	.020	-.052	.048	56
63	.330	-.070	.047	-.093	.066	-.253	-.145	-.023	.086	-.140	.112	-.035	.186	.121	.084	-.045	-.194	-.078	-.230	-.028	-.048	.087	.118	-.008	-.021	-.056	63
65	-.727	-.189	-.150	-.014	.184	.095	.128	.026	.002	.183	-.008	-.091	-.145	-.037	.126	-.127	-.012	.024	.055	.056	.074	-.059	-.022	.135	.084	.048	65
66	.209	-.025	.161	.005	-.078	-.104	-.108	-.040	.113	.007	-.135	-.117	.067	.004	-.047	.040	.038	-.070	-.635	.049	-.038	-.031	-.031	.066	.078	.077	66
67	-.374	.048	-.111	.006	.096	-.008	.132	.006	.118	.029	.038	-.029	-.059	-.029	-.004	.071	-.009	-.013	.021	.043	.098	-.729	.020	.002	.068	-.053	67
80	-.067	.093	-.093	-.024	.028	-.012	.121	.056	-.331	.043	.029	.049	.040	.010	-.039	-.037	.072	.098	.034	-.139	.025	.053	-.065	.025	.184	-.044	80
82	.060	.390	-.090	.102	-.105	.009	-.015	.054	-.389	-.003	.102	.142	-.101	-.079	-.056	.038	.224	.047	.045	-.046	-.025	-.216	-.127	-.048	-.082	-.053	82
85	-.733	.005	.010	-.064	-.075	-.114	.027	.028	.015	-.054	-.106	.035	-.085	-.021	.001	-.064	.000	-.217	-.060	.091	.024	-.062	-.076	-.091	.008	-.044	85
86	.332	-.004	.068	-.004	.023	.045	-.085	-.088	-.014	.001	.029	-.004	-.056	.044	-.032	.025	-.018	.108	-.010	-.013	.064	.068	.019	-.015	-.047	.019	86
88	-.648	.090	-.013	-.049	.032	-.126	.146	-.001	-.233	-.045	.074	-.074	.090	.025	-.050	-.089	.071	-.136	.110	.048	.020	-.018	.145	.043	-.040	-.237	88
92	.207	.024	.071	-.095	.037	-.040	-.102	-.008	-.080	.005	.044	-.034	.129	-.003	-.063	-.072	.005	.027	-.020	-.786	-.044	.034	-.066	-.003	.025	-.018	92
93	-.005	-.009	.050	.027	.095	.818	-.020	.089	-.004	-.019	.073	.037	-.024	-.001	.056	.101	.050	.016	.056	.048	-.020	.004	-.086	-.011	.034	.069	93
95	.216	.648	.108	.022	.019	.042	-.047	-.118	-.181	-.046	.121	.113	-.045	.071	-.324	.054	.112	.033	.131	.082	-.169	.046	-.062	.119	-.136	-.020	95
99	.102	.014	-.041	-.031	-.040	-.022	-.057	-.038	.043	-.024	-.838	-.070	.037	.003	.050	.020	.055	-.045	[illegible]	-.025	-.059	.051	.020	.034	.004	.035	99
100	-.024	.265	-.106	.058	.022	.012	.035	-.094	-.108	.063	-.258	.049	-.153	.034	-.065	.039	.017	-.026	[illegible]	.076	-.053	-.007	-.008	-.020	-.017	-.003	100
102	-.041	-.015	-.043	-.035	-.043	-.050	.078	-.036	-.057	.013	-.838	.016	-.075	-.009	-.061	.032	-.019	-.016	-.086	.062	.049	-.023	-.021	-.026	-.045	-.047	102
103	.382	-.184	.077	-.111	-.199	-.170	-.172	-.051	.265	-.009	-.088	-.100	-.014	.036	.053	-.011	-.128	.006	-.200	-.326	-.028	-.060	.083	.094	-.044	-.068	103
105	-.500	.238	-.168	-.034	.128	.123	.004	.041	-.208	-.090	.073	.165	.162	-.033	-.110	.105	.033	.033	.300	.093	.009	-.012	.001	-.002	.022	.049	105
106	-.365	-.048	-.149	-.075	-.020	.060	.045	.092	-.087	.101	.062	-.002	.079	.025	-.014	-.121	.047	-.085	.063	-.032	.012	-.074	.007	.015	.742	-.019	106
111	.189	.030	.147	.057	-.067	.016	-.095	-.055	.020	-.778	-.004	.045	.156	.049	-.060	.006	-.149	-.026	-.047	.005	-.068	.020	.064	-.006	-.108	.069	111
112	-.305	.173	-.015	-.001	.110	.175	.053	-.119	-.199	-.370	-.044	.209	-.142	.040	-.013	-.101	.059	-.045	.308	-.010	-.115	.161	-.109	.059	.144	.020	112
119	.056	.767	.019	.064	-.094	-.028	-.083	-.048	-.069	-.085	.037	.015	.058	.020	-.076	.029	.137	-.104	.033	-.016	.159	-.058	.022	.090	.050	.009	119
120	-.002	.845	-.036	.006	.082	.080	.059	.022	-.123	.057	-.072	.059	-.062	-.014	.004	-.070	.001	.053	-.018	.013	.110	-.004	-.149	-.113	.032	.005	120
121	.045	.668	-.055	-.029	-.025	-.085	-.133	-.028	-.034	-.158	-.132	.026	-.240	.012	-.166	.191	.052	.023	-.013	-.096	-.069	-.018	.003	.012	.002	-.052	121
122	.076	.752	-.111	.008	-.009	-.047	-.036	-.059	-.160	-.028	.047	.033	-.042	-.016	-.077	-.023	-.205	-.005	.187	-.020	-.027	-.018	-.014	-.034	-.062	-.117	122
124	-.305	.143	-.775	.091	.048	-.110	-.016	.040	-.172	.088	-.129	.071	-.118	-.047	-.009	.055	.021	.005	.117	.105	.074	-.030	-.035	-.034	.032	-.062	124
125	-.169	.626	-.147	.043	.092	.008	.025	-.018	-.239	.183	.002	.088	-.013	-.080	.008	.019	.137	.265	.170	.058	-.241	.053	-.035	-.022	.006	.004	125
128	-.194	.044	-.106	-.125	-.013	-.026	.052	-.014	.105	.074	.019	-.010	.032	.017	.128	.032	-.055	-.114	.010	.048	.753	-.072	.066	.014	.006	.029	128
130	.005	-.068	-.013	-.154	-.006	-.054	.044	-.013	.030	-.090	.035	-.014	.005	.014	.039	-.060	-.799	-.020	-.056	.000	.049	-.007	.078	.005	-.028	-.048	130
131	-.805	.070	-.271	.005	.029	-.028	.078	-.051	-.056	.018	.059	.044	-.061	-.113	.055	.037	-.017	.058	.114	-.055	.105	-.028	.054	.036	.084	-.080	131
132	-.475	.025	-.723	-.076	.056	.012	.069	-.042	-.081	.151	-.032	-.037	-.078	-.020	.093	-.003	-.055	-.006	.048	.030	.115	-.141	.122	.055	.174	.013	132
133	.334	.062	.001	.028	-.002	.023	-.034	-.034	.037	.017	.079	-.007	-.046	-.112	-.079	.103	.028	.764	-.027	-.035	-.136	.007	-.015	.011	-.069	.079	133
135	-.665	-.169	-.143	.048	.294	.047	.138	.115	-.172	-.051	.013	.123	.094	-.026	.103	-.085	.020	-.063	.000	.140	-.077	.004	.040	.054	.130	.104	135
136	-.491	-.440	-.128	-.078	.034	.023	.084	.095	.054	.056	-.043	.022	.117	-.068	.518	-.120	-.009	-.012	-.025	.053	.197	-.095	.028	-.029	.099	-.015	136
137	-.285	-.066	-.045	.026	.183	-.095	.057	.471	-.114	.048	.046	-.020	-.113	.092	.250	.031	-.188	.115	-.149	.060	-.103	-.084	.071	-.008	.001	.042	137
138	-.095	-.223	-.011	-.041	-.054	.064	.022	.239	-.026	.055	.017	-.008	.015	.022	.831	-.072	-.045	-.067	-.073	.064	.101	.027	.045	.002	-.033	.022	138
139	-.065	.158	-.086	.024	.123	-.019	.045	.033	-.617	.031	-.044	.073	-.050	.017	-.030	-.124	.117	.008	.165	.022	-.046	.036	-.107	.009	.034	-.002	139
140	-.094	.091	-.070	-.032	.085	.039	.038	.035	-.361	.002	.071	.099	-.014	.026	-.046	-.111	.044	.021	.159	.002	-.028	.062	-.032	.008	-.031	-.030	140
141	-.215	.020	-.055	.014	.795	.105	.024	.150	-.100	.056	.090	.024	.053	-.024	-.036	-.029	.001	.003	.071	-.038	-.012	-.074	-.078	-.002	-.019	-.021	141
142	-.029	.140	-.016	.001	.069	-.062	.025	.020	-.880	.035	-.018	.023	-.025	.015	.027	-.025	-.040	-.024	.033	.026	-.031	.087	-.071	-.016	-.070	-.035	142
143	-.107	.185	-.108	-.018	-.010	.111	.036	-.084	-.760	-.073	.005	.062	-.017	.026	.026	-.083	-.020	-.044	.071	-.108	-.052	-.024	.012	.043	.146	-.056	143
144	-.125	.246	-.097	-.025	.073	.027	.045	-.007	-.182	.078	-.017	.108	-.044	.042	-.107	.010	-.059	-.028	.125	-.019	-.138	.098	-.036	.020	-.053	-.050	144
146	.168	-.252	.096	-.117	.086	.143	-.267	.008	.140	.062	-.032	-.474	.225	.025	.027	-.109	.018	.005	-.354	-.002	.031	-.055	.036	-.128	-.068	-.055	146
147	-.423	-.114	-.040	-.020	-.001	-.102	.122	.172	-.105	.006	-.101	.099	.174	.050	-.073	-.128	-.062	.095	.247	-.023	.146	-.002	-.028	.394	.105	-.049	147
148	.071	-.232	.010	-.049	-.037	-.025	-.038	-.005	.155	-.059	-.107	-.144	.118	-.019	.139	-.030	-.134	.085	-.710	.072	.011	.064	.088	-.070	.003	.008	148
150	.557	-.137	-.123	-.083	-.017	-.067	-.044	.002	.092	.320	.053	-.040	-.065	-.126	.274	-.124	-.052	-.146	-.086	-.002	.040	.008	-.020	-.020	-.172	.111	150
151	-.105	.180	-.119	.166	.108	-.058	.092	-.158	-.136	-.042	.004	.037	.034	.059	-.136	.146	.080	.033	.199	-.017	-.038	.025	-.110	.024	.067	-.024	151
159	-.378	.168	-.064	-.078	.038	-.162	.053	.100	-.155	.104	-.034	-.115	.014	.053	-.035	-.071	-.123	-.128	.066	-.057	-.061	-.092	-.012	.010	.030	-.600	159
161	-.651	.091	-.200	.022	.209	.120	.040	.105	-.218	-.060	.063	.174	-.037	-.106	.013	-.054	.010	.055	.270	.175	-.059	.012	.014	-.098	.079	.054	161
Variance	8.265	4.545	1.694	1.669	1.228	1.269	2.486	1.933	3.307	1.403	1.792	1.159	1.290	1.047	1.785	1.368	1.144	.975	1.954	1.040	1.011	.878	.864	.303	.952	.697	Variance
% of Tot. V	11.807	6.492	2.420	2.384	1.754	1.813	3.552	2.761	4.724	2.004	2.561	1.656	1.843	1.496	2.550	1.955	1.635	1.393	2.792	1.485	1.444	1.254	1.234	.432	1.361	.996	% of Tot. V
% of Com V	14.050	7.725	2.879	2.837	2.087	2.157	4.227	3.285	5.621	2.385	3.047	1.970	2.193	1.780	3.035	2.326	1.945	1.657	3.322	1.767	1.718	1.492	1.469	.514	1.619	1.185	% of Com V

TABLE 5.11 (cont'd)

FACTORS

VAR.	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	
2	-.034	.029	.017	-.129	.004	.053	.015	.016	.010	.001	-.029	.023	-.002	-.004	.004	-.014	.032	-.004	.003	.002	-.036	-.001	.001	.007	.001	2
4	-.078	-.005	-.033	-.019	.014	.069	-.105	-.042	-.022	.000	.070	.055	.013	.077	-.054	-.010	.180	.083	-.037	-.013	-.065	.009	-.009	.042	.014	4
5	-.097	-.138	.027	.085	-.058	.086	.017	-.016	-.026	-.030	.094	-.141	.077	.126	-.007	-.052	.171	-.068	.066	-.044	-.104	.026	.000	-.125	.035	5
7	.021	.084	.123	.157	-.078	-.166	-.040	.020	.036	.007	-.083	-.064	.000	.010	.005	-.003	-.020	-.004	.012	-.004	-.023	-.006	.030	.025	-.010	7
16	-.081	.013	.014	.006	-.059	.089	-.016	.036	-.002	-.115	.033	.054	.037	.004	.050	.093	.035	.065	-.018	.008	.119	.048	.043	.084	-.030	16
17	.053	-.066	-.020	-.812	.002	.113	.011	.005	-.031	-.001	.017	.040	-.002	-.023	-.001	-.045	.060	.001	.001	-.004	.058	.000	.000	.010	-.001	17
27	.014	-.111	.027	.046	.057	-.027	.068	-.276	.052	-.011	.045	-.007	-.025	.103	-.131	-.072	-.020	.007	-.025	-.021	-.068	.015	.024	.030	.037	27
32	-.055	.052	.013	.071	.021	.135	-.017	.018	-.039	.020	-.160	-.036	.001	-.014	-.004	.003	-.079	.004	-.002	.011	.036	-.001	.001	.021	-.003	32
33	-.139	-.037	-.150	.042	.020	-.069	-.017	.022	-.179	-.024	-.042	-.014	-.048	-.028	.026	-.103	.064	-.002	-.003	-.074	.133	.000	.000	-.413	-.001	33
34	-.093	.128	.021	.327	.039	.104	.048	-.026	.031	.047	-.109	.059	.015	-.004	.012	.510	-.151	-.003	-.006	-.017	-.030	.000	.003	.064	-.001	34
39	-.049	.007	-.064	.013	.049	-.020	-.064	-.130	-.003	.025	-.011	.058	-.014	-.026	-.055	.030	.064	.014	-.030	.037	-.077	-.009	-.044	-.037	.045	39
40	-.154	.020	-.194	.001	.547	.044	.022	-.061	-.093	.035	.024	-.065	-.009	-.017	-.009	.027	-.065	-.001	.002	-.004	-.146	.001	-.001	-.010	.000	40
42	.020	.115	.028	.086	.049	.059	-.020	.001	.089	-.011	-.050	-.586	-.005	.008	-.006	-.025	-.091	.000	.001	-.017	.089	.000	-.001	-.006	-.001	42
43	-.043	.032	.056	.083	-.013	-.757	-.006	.013	.033	-.003	-.010	.020	.003	.010	.000	-.019	.000	.000	.001	.001	.016	.000	-.001	-.006	.000	43
44	-.019	-.035	-.045	.002	-.033	.037	.024	.012	-.078	.006	.001	-.016	-.023	-.026	.006	.011	.055	.009	-.008	-.017	.148	-.004	.000	-.009	-.004	44
45	.024	-.010	.075	.012	-.049	-.053	.008	-.021	.033	-.016	.027	-.008	-.004	.001	-.004	-.027	.013	.001	-.006	.009	.094	.003	.004	-.008	-.002	45
49	.039	.048	.080	.047	.122	-.072	-.028	-.005	.024	-.036	-.022	.020	.089	.023	-.028	.043	-.068	.003	-.050	.027	-.044	-.023	-.017	.026	.008	49
50	-.104	-.098	-.229	-.167	-.030	.096	.110	.012	-.065	-.019	.013	-.003	-.078	-.041	.111	-.026	.021	-.003	.066	.013	.055	.072	.027	-.047	.003	50
51	-.078	-.044	.023	-.047	-.085	.026	-.053	-.024	-.091	.076	.054	-.091	-.039	-.004	-.054	-.058	.143	-.001	.009	-.051	.099	-.029	-.006	-.010	-.010	51
53	-.040	.007	.019	-.034	.002	-.067	.096	.169	-.043	-.033	-.111	-.028	.015	.050	.053	-.075	-.007	-.013	.029	-.038	-.035	.012	.049	.038	-.046	53
55	-.008	-.001	-.006	-.008	.012	.062	.018	-.059	.019	-.002	.008	-.018	.003	.017	-.010	-.016	.020	.006	-.020	-.028	.063	.009	.013	-.016	-.006	55
56	.012	.024	.039	.007	-.027	-.015	-.009	.102	-.005	.008	.059	.020	-.012	-.025	.013	.005	.019	-.012	.036	.041	.065	-.014	-.021	.007	.011	56
63	-.033	.121	-.034	.187	.063	.006	-.030	-.081	.050	-.008	-.035	-.100	.005	.007	.008	.098	-.592	.000	.011	.000	-.077	.001	-.003	.022	.001	63
65	.034	-.069	-.086	-.221	-.018	.072	-.110	-.021	-.079	.000	-.056	.054	-.074	.006	-.069	.135	.141	-.055	.001	-.031	.022	-.032	.020	-.086	.026	65
66	-.050	.003	.136	.194	.079	-.231	-.007	.086	-.013	.064	-.054	-.033	-.061	.045	.023	.027	-.092	-.018	-.120	.027	-.026	-.026	.010	-.088	-.037	66
67	-.083	.104	.059	.023	-.007	.047	.027	-.011	.049	-.002	.005	.068	.002	.009	.003	-.006	.032	.000	.000	.006	-.021	.001	.000	-.016	.000	67
80	-.052	.036	-.088	-.042	.035	.052	.014	.002	-.613	-.003	-.031	.047	-.001	-.001	.001	-.004	.027	.000	.001	-.010	.027	-.001	.001	-.028	.000	80
82	-.088	-.086	-.233	-.048	.045	.051	.406	.045	-.062	-.008	.142	.068	-.005	.024	.037	.064	.114	-.002	-.001	.010	.048	-.002	.000	.018	.002	82
85	-.249	-.070	.025	.055	-.036	.002	.124	-.023	-.001	.021	.079	.052	-.005	-.036	.297	.062	-.087	.005	-.007	.054	-.004	-.002	.001	-.077	.000	85
86	.770	.015	.034	-.055	-.047	.054	-.009	.001	.042	-.001	.020	-.006	-.009	-.006	-.006	-.019	.011	.000	.001	-.003	-.058	.000	.000	.017	.000	86
88	-.178	-.160	.022	.036	-.036	-.012	-.016	.012	-.008	.007	-.026	.014	.325	-.043	-.003	.060	-.107	.002	.004	.096	.056	.000	-.001	.121	-.001	88
92	.019	-.021	-.002	-.024	.025	-.073	.012	.009	-.092	-.010	-.061	.000	-.008	.004	-.003	-.012	-.007	-.001	.006	.003	.014	.000	.000	.009	-.001	92
93	.037	-.007	-.025	-.131	.006	.053	.001	.008	.011	.009	.005	.014	-.006	-.017	-.005	-.035	.063	.000	.000	.002	-.036	-.001	-.001	.007	.000	93
95	-.019	-.042	-.070	.001	-.078	.071	-.019	.020	.003	.142	.231	.000	.047	-.029	-.025	-.170	-.027	-.073	-.072	.052	.094	-.015	.055	.044	.030	95
99	.025	-.023	.050	.013	.008	-.052	-.011	.046	-.027	.002	.057	.020	-.008	.043	-.031	-.022	.065	-.025	.014	.017	-.075	-.070	.070	.102	-.004	99
100	.022	-.022	-.031	-.026	.011	.018	.020	-.005	.031	-.017	.690	.023	-.002	-.008	.004	-.025	.014	.001	.002	.001	-.024	.000	-.001	.006	-.001	100
102	-.056	.014	.002	-.085	-.062	.013	-.003	-.038	.046	-.015	.117	-.015	.005	-.043	.039	-.008	-.038	.028	-.016	-.025	.079	.074	-.073	-.107	.004	102
103	-.070	.169	.071	.081	-.028	-.047	-.169	.134	.025	.038	.035	-.203	.135	.058	.009	-.109	-.303	.006	-.105	.000	-.067	.001	.013	.019	.002	103
105	.046	-.008	-.174	-.148	.045	.067	.052	-.033	-.031	.029	.049	.028	.002	-.358	.028	.051	.129	.024	.023	-.051	-.002	.019	-.046	-.004	-.011	105
106	-.062	.052	.032	.030	-.001	.069	-.016	-.004	-.184	-.000	-.025	.037	-.004	-.014	.000	-.016	.014	.000	.001	-.006	.069	.000	.000	-.022	.000	106
111	-.002	.082	.011	.168	.019	-.072	.009	-.002	.034	-.009	-.057	-.081	.005	-.003	.006	-.026	-.042	.007	.005	.016	.021	.003	-.009	-.017	-.001	111
112	-.014	-.193	-.085	-.159	.026	.125	-.123	-.018	.016	-.053	.047	.024	.034	-.331	-.010	-.073	-.109	-.040	-.019	-.067	.029	-.027	.065	-.057	.019	112
119	-.007	-.090	-.011	.021	.042	-.027	-.070	-.204	.044	.023	-.024	-.002	.006	.056	-.004	.020	-.062	-.016	-.010	-.006	.055	.130	.002	-.002	-.001	119
120	-.047	.005	-.037	.016	-.020	.070	.003	.013	.002	-.061	.024	.059	.001	-.002	.055	.023	.078	.072	-.044	-.052	.063	-.063	-.003	-.045	.019	120
121	.017	-.001	.058	-.035	-.124	-.021	.016	.008	-.027	-.385	.157	-.043	-.006	-.011	-.012	-.106	[illegible]	-.003	.002	.054	-.083	-.003	.000	-.034	.000	121
122	.071	-.146	.017	-.048	-.016	.025	.053	.182	-.105	.135	.075	.075	-.046	-.079	-.007	-.033	[illegible]	-.016	.148	.009	.033	-.037	-.008	.011	-.034	122
124	-.019	-.122	-.134	-.046	-.006	-.044	-.016	.017	-.064	.029	.142	.018	.034	.029	.016	-.021	.025	.029	.023	.018	.120	-.009	-.008	-.022	.010	124
125	-.005	-.075	-.148	-.033	.096	.177	.135	.086	-.090	.011	.059	-.031	.027	-.066	-.109	.089	.004	-.065	-.043	-.062	.026	-.041	-.024	.002	-.020	125
128	-.060	.100	.020	.039	.007	-.001	-.001	.013	-.021	.007	-.042	.019	.002	.005	.000	.024	.019	-.001	-.001	.006	-.025	.000	.000	.013	.000	128
130	.011	-.038	.024	.017	-.001	.079	-.019	-.020	.039	.003	-.014	.019	-.004	.006	.000	.018	-.050	.001	.000	.012	-.044	.000	.000	.019	.001	130
131	-.124	.093	.015	.101	.051	-.037	.061	.077	.054	.122	-.016	-.003	-.029	-.056	-.042	-.026	.104	-.127	.028	-.047	.068	.005	-.007	-.066	.011	131
132	-.106	-.012	.053	-.112	.010	.003	.045	-.042	-.061	-.054	-.006	.075	-.044	-.065	-.021	.088	.007	-.033	-.029	-.044	.000	.012	.010	.016	-.014	132
133	.124	.025	-.015	-.036	-.010	-.082	.005	-.016	-.081	-.002	-.024	.050	-.009	.002	-.004	-.015	.030	.001	.001	.001	.031	.001	.001	-.012	.001	133
135	.086	-.036	-.149	-.152	.096	.050	-.026	-.024	-.047	.007	-.178	-.033	-.033	-.004	-.114	.008	-.092	-.011	.051	-.025	.049	-.032	-.112	.006	-.031	135
136	-.061	.030	-.054	-.081	.047	.078	-.074	.061	-.005	-.073	-.120	.026	-.080	-.049	-.038	.128	-.056	-.001	.044	-.040	-.100	.005	.029	-.064	-.025	136
137	-.010	-.057	.118	.012	.107	.121	-.039	-.437	-.016	.006	.018	.018	-.003	-.054	.035	.037	-.139	-.001	.014	-.034	-.019	-.011	-.004	.013	-.013	137
138	-.015	.087	.049	.044	.057	.032	.007	-.041	.040	.032	-.037	-.006	.013	.023	.003	.014	-.022	-.005	-.013	.014	-.079	-.002	-.001	.042	.006	138
139	.028	-.163	-.073	.026	.012	.011	-.010	-.043	-.052	.037	-.016	-.054	-.039	-.064	-.021	.029	.002	-.001	.001	-.375	-.031	.000	.000	-.076	.000	139
140	-.038	-.148	-.715	.024	.072	.090	.027	.021	-.082	.008	.031	.015	-.001	-.024	-.004	-.007	-.014	.000	.000	-.013	.028	-.001	.000	-.025	.000	140
141	.019	-.052	-.059	-.089	.044	.062	-.014	-.016	-.015	.002	.023	-.058	.004	-.017	-.001	.022	-.014	.001	-.003	-.014	.072	.001	.002	.008	.002	141
142	.000	.006	-.074	-.063	-.011	.056	-.039	-.020	-.021	.001	.078	-.016	-.004	-.009	.019	-.010	-.011	-.008	-.024	.033	.050	-.008	.075	.030	-.011	142
143	.033	-.062	-.129	-.025	.031	-.026	.081	.031	-.179	-.022	-.004	.008	.035	-.008	-.018	.001	.019	.022	.022	.114	.100	.008	-.109	-.001	.010	143
144	-.020	-.724	-.141	-.083	-.010	.043	.019	-.019	-.030	.000	.029	.054	.011	-.007	.003	-.035	.062	.001	-.001	-.021	.057	.002	-.004	-.007	.002	144
146	-.042	.279	.033	.055	.013	-.052	.021	-.065	.096	-.014	.042	-.107	.030	.082	-.022	-.041	-.034	.012	-.038	.060	-.084	.017	-.092	-.019	.032	146
147	-.133	-.240	-.046	-.105	.111	.110	-.058	.002	-.258	-.012	-.158	.083	.028	-.031	-.032	-.072	-.012	.001	-.005	-.009	.185	.004	-.003	.004	-.001	147
148	.058	.123	.054	-.027	-.050	.028	-.009	-.090	.040	-.052	-.012	-.033	.034	-.017	-.010	.019	-.047	.014	.093	-.003	-.177	.016	.001	.074	.026	148
150	-.091	.045	.005	-.039	-.013	.181	-.072	.038	-.114	.008	.114	-.060	.046	.040	.057	.192	.166	.118	.066	.037	-.271	-.001	-.056	.061	.025	150
151	-.083	-.067	-.031	-.082	-.063	-.021	.008	.008	-.039	.013	-.022	-.053	.006	-.002	.003	-.006	.043	.003	.004	.008	.703	.001	-.002	-.021	.001	151
159	-.036	-.062	-.050	.072	.066	-.025	.008	.014	-.071	-.009	.005	-.122	.019	.001	.013	.005	-.037	-.001	.002	-.001	.041	-.001	-.002	.021	-.003	159
161	-.015	-.167	-.167	-.185	.058	.044	.002	.006	-.125	.038	-.031	.100	-.112	-.114	-.016	.053	-.066	-.028	-.006	-.051	.016	-.097	.012	.013	-.006	161
Variance	.942	1.094	.994	1.262	.475	.970	.353	.493	.724	.262	.839	.563	.200	.349	.185	.497	.794	.073	.098	.223	.922	.059	.073	.307	.018	Variance
% of Tot. V	1.346	1.563	1.420	1.803	.679	1.385	.504	.705	1.034	.374	1.198	.805	.286	.499	.264	.710	1.134	.104	.140	.319	1.317	.085	.105	.438	.026	% of Tot. V
% of Com V	1.602	1.860	1.690	2.145	.808	1.648	.600	.838	1.230	.445	1.426	.957	.340	.594	.314	.845	1.349	.124	.167	.380	1.568	.101	.125	.522	.031	% of Com V

161	Mean teacher salary, K-12	.651
88	Ratio of graduates attending four-year college to total high school graduating class	.648
27	Median years of school completed by population age 25 and over	.643
150	Expenditure per pupil for debt service	.557
105	Percent of teachers with five years of professional preparation	.500
136	Expenditure per pupil for current operation, secondary	.491
132	Percent of total high school enrollment in fine arts classes	.475
147	Expenditure per pupil in A. D. M. for health and recreation	.423
159	Percent of 1960 population living in a different state in 1955	.378
67	Receipts per pupil from local non-tax sources	.374
106	Percent of teachers with over five years of professional preparation	.365
112	Median years of total teaching experience, secondary teachers	.305
124	Average size of high school fine arts classes	.305
137	Expenditure per pupil for elementary school library books, materials and supplies	.285
51	Municipal disbursements per capita for health and sanitation	.257
2	Equalized valuation per capita	.249
141	Expenditure per pupil for education of educable mentally handicapped	.215
39	Municipal revenue per capita from special assessments	.202
34	School tax rate on equalized valuation	.199
128	Percent of total high school enrollment in math classes	.194
50	Municipal disbursements per capita for protection	.193
5	Equalized valuation of mercantile property per capita	.191
125	Average size of high school vocational classes	.169
146	Expenditure per pupil in A. D. M. for transportation	-.168
111	Median years of total teaching experience, elementary teachers	-.189
45	Receipts per capita from municipal public service enterprises	-.194
92	Ratio of dropouts to enrollment in grades 9-12	-.207
66	Receipts per pupil from federal sources	-.209
95	Pupils per teacher, 9-12	-.216
7	Equalized valuation of agricultural property per capita	-.237
63	Receipts per pupil from state sources	-.330
86	Ratio of pupils in lowest decile to total tested population	-.332
133	Percent of total high school enrollment in vocational subjects	-.334
103	Percent of teachers with less than four years of professional preparation	-.382
42	Municipal revenue per capita from gifts and grants	-.382
33	Municipal tax rate on equalized valuation	-.415

It is immediately apparent that Factor A-3 is highly correlated with school district wealth as measured by personal income and as measured by equalized valuation of residential property. Further study of the relationships between this factor and the variables with which it is correlated leads one to surmise that Factor A-3 describes the educational climate of a community. There exist no high correlations between this factor and various categories of municipal revenues and disbursements. A slight positive correlation exists between Factor A-3 and municipal disbursements for health and sanitation and for protection. No other categories of municipal disbursement correlate with the factor at a statistically significant level. Factor A-3 shows a moderate negative correlation with municipal revenue from gifts and grants and a slight negative correlation with municipal revenue from public service enterprises. It has a slight positive correlation with municipal revenue from special assessments. All other variables relating to municipal revenue have no significant correlation with this factor. These relationships indicate that wealthy communities spend more for health, sanitation, and protection and receive proportionately more revenue from special assessments and proportionately less revenue from gifts, grants, and municipal public service enterprises. These relationships are undoubtedly influenced by rapidly growing urban and suburban areas which typically have a high level of personal income, high residential property valuation and substantial income from special assessments on such items as curbing, gutters, sidewalks, etc. Similarly, a rapidly growing area is less likely to operate public service enterprises such as electric and water utilities.

It is evident that the secondary school curriculum is influenced by a community's wealth. It will be noted that high school enrollment in foreign language courses is very closely associated with Factor A-3. This is also true to a lesser degree of high school enrollment in fine arts and mathematics classes. On the other hand, percent of total high school enrollment in vocational subjects is inversely related to this factor. It appears that the nature of the local school district has a definite influence on secondary school curriculum in the school districts represented in this study.

It is of significance that equalized valuation of residential property is much more closely correlated with Factor A-3 than is equalized valuation of all property. Furthermore, equalized valuation of agricultural property is inversely related to the factor and mercantile property valuation shows only a slight positive correlation.

Turning to tax rates, county tax rate has practically no correlation with Factor A-3 and, by implication, little relationship to personal income payments. Municipal tax rates exhibit a rather high negative correlation with the factor, indicating that districts with high personal income have relatively low municipal tax rates. Since Wisconsin shares income tax payments with the municipality in which the taxpayer resides, this relationship is to be expected. School tax rates show a slight positive correlation with Factor A-3, indicating that districts with high personal income tend to levy somewhat higher taxes in support of their public schools. The anticipated relationship between various sources of school support and this factor was confirmed. Receipts from local tax sources correlate closely with Factor A-3; those from local non-tax sources are significantly correlated, but at a much lower level; and receipts from federal and state sources are inversely related.

The relationship of variables to Factor A-3 suggests that districts whose residents enjoy a high level of personal income and where residential property valuations are high will have a larger percentage of academically able pupils, a higher number of high school graduates attending four-year colleges, and relatively few pupils in the lowest decile on a standard intelligence test. It would appear that such districts will have fewer dropouts, although the correlation between dropout rate and Factor A-3 is much lower than one might expect. These districts also have lower pupil-teacher ratios and a higher proportion of their teachers have five or more years of professional preparation. Secondary school teachers in such systems apparently have more total teaching experience and elementary school teachers less total teaching experience than the average. The average teacher salary in such systems is substantially higher. In general, these school systems will have a well-educated adult population which is quite mobile (when measured by movement from state to state). Such school districts devote more money to health and recreation programs for pupils and to debt service.

In summary, school systems where personal income is high will have high valuation of residential property, a well-educated citizenry, a relatively mobile population, an academically talented student body, a lower level of dropouts, a high level of school support from local taxes, lower pupil-teacher ratio, a well-prepared teaching staff receiving higher than average salaries, and a secondary school curriculum designed to prepare pupils for college entrance rather than for direct entry into the work force upon completion of secondary school.

Factor B-3. -- This factor is associated with high school class size. It accounts for 6.5 percent of the total variance and 7.7 percent of the common variance. The following variables correlate significantly with Factor B-3:

	Variable	Correlation
120	Average size of high school mathematics classes	.845
119	Average size of high school English classes	.767
122	Average size of high school science classes	.752
121	Average size of high school social studies classes	.668
95	Pupils per teacher, 9-12	.648
125	Average size of high school vocational classes	.626
82	Total non-resident A. D. M.	.390
100	Pupils per administrator, 9-12	.265
44	Municipal revenue per capita from other commercial receipts	.263
144	Expenditure per pupil for remedial speech instruction	.246
105	Percent of teachers with five years of professional preparation	.238
143	Expenditure per pupil for education of deaf and hard of hearing	.185
151	Expenditure per capita for public libraries	.180
112	Median years of total teaching experience, secondary teachers	.173
159	Percent of 1960 population living in a different state in 1955	.168
42	Municipal revenue per capita from gifts and grants	-.167
135	Expenditure per pupil for current operation, elementary	-.169

103	Percent of teachers with less than four years of professional preparation	-.184
65	Receipts per pupil from local tax sources	-.189
7	Equalized valuation of agricultural property per capita	-.196
32	County tax rate on equalized valuation	-.197
138	Expenditure per pupil for secondary school library books, supplies and materials	-.223
148	Expenditure per pupil in A. D. M. for school lunch	-.232
34	School tax rate on equalized valuation	-.238
146	Expenditure per pupil in A. D. M. for transportation	-.252
136	Expenditure per pupil for current operation, secondary	-.440

Factor B-3 is closely associated with the average size of high school classes in various subject matter areas. The sizeable negative correlation between this factor and expenditure per pupil for current operation of secondary schools is to be expected. Schools which have small classes would be expected to have a higher cost of operation. The slight positive correlation between Factor B-3 and ratio of pupils to secondary school administrative staff, percent of teachers with five years professional preparation and total experience of secondary staff, indicates a tendency for these variables to vary directly with high school class size. There is an inverse relationship between the factor and expenditures for secondary school library materials, school lunch and pupil transportation. The factor is uncorrelated with wealth as reflected in equalized valuation and personal and corporate income. It has a slight negative correlation with equalized valuation of agricultural property. The factor bears practically no relationship to municipal revenue and disbursements. It is also uncorrelated with academic ability of the student body.

Factor C-3. -- This factor is related to the average size of high school fine arts classes and the percent of high school enrollment in fine arts classes and closely resembles Factor JJ-2. It accounts for 2.4 percent of the total variance and 2.9 percent of the common variance. The following variables correlate significantly with Factor C-3:

	Variable	Correlation
124	Average size of high school fine arts classes	.775
132	Percent of total high school enrollment in fine arts classes	.723
131	Percent of total high school enrollment in foreign language classes	.271
161	Mean teacher salary, K-12	.200
105	Percent of teachers with five years of professional preparation	.168

Factor C-3 most nearly describes the secondary school curriculum in fine arts as reflected in average class size and percent of high school enrollment in this area of the curriculum. Factor C-3 also shows slight positive correlations with enrollment in fine arts, average teacher salary, and percentage of teachers with five years of professional preparation. There exists no statistically significant correlation between Factor C-3 and district wealth, municipal receipts and disbursements, teacher-pupil or teacher-administrator ratio, average class size or percent of enrollment in other areas of the secondary school curriculum, or specific expenditure items.

Factor D-3. -- This factor is highly correlated with two categories of municipal disbursement--those for recreation and those for operation of public service enterprises. The factor accounts for 2.4 percent of the total variance and 2.8 percent of the common variance. The following variables correlate significantly with Factor D-3:

	Variable	Correlation
55	Municipal disbursements per capita for recreation	.902
56	Municipal disbursements per capita for public service enterprises	.780
151	Expenditure per capita for public libraries	.166

The high correlation between this factor and Variable 55 indicates that the latter describes Factor D-3 quite adequately. Subsumed in Variable 55 are municipal expenditures for parks, playgounds, athletic activities, swimming pools, bathing beaches and municipal celebrations. Variable 56, which also correlates quite highly with Factor D-3, includes expenditures for municipal electric and water utilities, quarries and gravel pits, markets and scales, cemeteries and crematories, and general hospitals. The factor also exhibits a slight positive correlation with expenditure for public libraries. Factor D-3 has practically no correlation with wealth as reflected in equalized valuation or in personal and corporate income tax payments, nor does it have significant correlation with any category of municipal revenue. The factor has no significant correlation with school tax rate, sources of school district receipts, expenditures per pupil for current operation, average class size, or percent of enrollment in various secondary school subjects.

Factor G-3.-- This factor appears to be relatively specific for municipal disbursements for general government, health and sanitation, and protection. It accounts for 3.6 percent of the total variance and 4.2 percent of the common variance. The following variables correlate significantly with Factor G-3:

	Variable	Correlation
49	Municipal disbursements per capita for general government	.862
51	Municipal disbursements per capita for health and sanitation	.798
50	Municipal disbursements per capita for protection	.756
53	Municipal disbursements per capita for highways	.258
103	Percent of teachers with less than four years of professional preparation	-.172
146	Expenditure per pupil in A. D. M. for transportation	-.267

The inverse relationship between Variables 103 and 146 and Factor G-3 is to be expected, since substantial expenditures for pupil transportation and a high percent of teachers with less than four years of preparation are primarily associated with rural areas. It is of interest to note that Factor G-3 has no significant correlation with district wealth, tax rates, or various sources of municipal revenue, nor does it have significant correlation with any variable related to school support or educational program.

Factor H-3. -- This factor describes two related aspects of municipal finance--revenue from special assessment and expenditures for highways.

The factor accounts for 2.8 percent of the total variance and 3.3 percent of the common variance. The following variables correlate significantly with Factor H-3:

	Variable	Correlation
39	Municipal revenue per capita from special assessments	.793
53	Municipal disbursements per capita for highways	.719
137	Expenditure per pupil for elementary school library books, materials and supplies	.471
40	Municipal revenue per capita from licenses	.411
138	Expenditure per pupil for secondary school library books, materials and supplies	.239
27	Median years of school completed by population age 25 & over	.192
147	Expenditure per pupil in A. D. M. for health and recreation	.172

This factor apparently is associated with municipalities experiencing rapid growth with attendant street construction. Substantial revenue from special assessments in such areas would be anticipated. The factor also is correlated with expenditures for elementary school libraries and with expenditures for secondary school libraries, educational level of the adults, and expenditures for health and recreation. The factor has no significant correlation with other aspects of the educational program, nor is it correlated significantly with district wealth or tax rates.

Factor I-3. -- This factor describes educational programs for physically handicapped pupils and closely resembles Factor F-2. It accounts for 4.7 percent of the total variance and 5.6 percent of the common variance. The following variables correlate significantly with Factor I-3:

	Variable	Correlation
142	Expenditure per pupil for education of visually handicapped	.880
143	Expenditure per pupil for education of deaf and hard of hearing	.760
139	Expenditure per pupil for education requiring orthopedic services	.617
5	Equalized valuation of mercantile property per capita	.467
82	Total non-resident A. D. M.	.389
140	Expenditure per pupil for education of trainable mentally handicapped	.361
80	Total resident A. D. M.	.331
44	Municipal revenue per capita from commercial receipts	.283
125	Average size of high school vocational classes	.239
88	Ratio of graduates attending a four-year college to total high school graduating class	.233
161	Mean teacher salary, K-12	.218
50	Municipal disbursements per capita for protection	.217
105	Percent of teachers with five years of professional preparation	.208
112	Median years of total teaching experience, secondary teachers	.199
144	Expenditure per pupil for remedial speech instruction	.182
95	Pupils per teacher, 9-12	.181
33	Municipal tax rate on equalized valuation	.180
124	Average size of high school fine arts classes	.172

135	Expenditure per pupil for current operation, elementary	.172
7	Equalized valuation of agricultural property per capita	-.170
103	Percent of teachers with less than four years of professional preparation	-.265

This factor is highly correlated with expenditures for the education of visually handicapped pupils and has relatively high correlation with expenditures for education of the deaf, hard of hearing, and pupils who require orthopedic services. These are highly specialized programs and one would expect to find them in relatively few districts. The moderate correlation between Factor I-3 and total enrollment suggests that such programs are concentrated in relatively large school districts. The two variables which are inversely related to Factor I-3 lend support to this view, since both are typically associated with relatively small rural school districts. The direct relationship between this factor and non-resident enrollment is to be expected, since such programs frequently serve non-resident pupils from outlying areas. The relationship of other variables to this factor supports the conclusion that Factor I-3 is relatively specific for educational programs for physically handicapped pupils.

Factor K-3. -- This factor accounts for 2.6 percent of total variance and three percent of the common variance and is closely associated with administrative staff. The following variables correlate significantly with Factor K-3:

	Variable	Correlation
99	Pupils per administrator, K-8	.838
102	Teachers per administrator, K-12	.838
100	Pupils per administrator, 9-12	.258
34	School tax rate on equalized valuation	-.170
40	Municipal revenue per capita from licenses	-.193

Factor K-3 is very similar to Factor D-2. It shows high correlation with pupil-administrator ratio in grades K-8, and teacher-administrator ratio in grades K-12, and a slight correlation with pupil-administrator ratio in grades 9-12. The inverse relationship between Factor K-3 and school tax rate indicates that administrative staff ratios decline as school tax rate increases. Its inverse relationship to municipal revenue from licenses is probably more indicative of type of community than of a particular pattern of municipal finance. Factor K-3 shows no significant correlation with school district wealth, municipal receipts and disbursements, district enrollment, percent of enrollment in various secondary school subjects, or expenditures per pupil for current operation.

Factor L-3. -- This factor appears to be related to rurality. It accounts for 1.7 percent of the total variance and two percent of the common variance. The following variables correlate significantly with Factor L-3:

	Variable	Correlation
7	Equalized valuation of agricultural property per capita	.709
146	Expenditure per pupil in A. D. M. for transportation	.474
105	Percent of teachers with five years of professional preparation	-.165

161	Mean teacher salary, K-12	-.174
112	Median years of total teaching experience, secondary teachers	-.209

The variable having highest correlation with Factor L-3 is equalized valuation of agricultural property, while expenditure for pupil transportation is also quite highly correlated with this factor. The three variables which are negatively correlated with Factor L-3 indicate that rural school districts have a secondary teaching staff with rather limited teaching experience, pay lower teacher salaries, and have a higher percentage of teachers with fewer than five years of professional preparation. The relationship of these variables to Factor L-3 supports the view that these school districts serve predominantly rural areas. No significant correlation was found between Factor L-3 and other variables relating to district wealth, municipal receipts and disbursements, school support from various sources, district enrollment, or expenditures per pupil for current operation.

Factor O-3. -- This factor is associated with expenditures for secondary school libraries. The factor accounts for 2.6 percent of the total variance and three percent of the common variance. The following variables correlate significantly with Factor O-3:

	Variable	Correlation
138	Expenditure per pupil for secondary school library books, materials and supplies	.831
136	Expenditure per pupil for current operation, secondary	.518
39	Municipal revenue per capita from special assessments	.280
150	Expenditure per pupil in A. D. M. for long-term debt	.274
40	Municipal revenue per capita from licenses	.256
34	School tax rate on equalized valuation	.252
137	Expenditure per pupil for elementary school library books, materials and supplies	.250
51	Municipal disbursements per capita for health and sanitation	.190
121	Average size of high school social studies classes	-.166
33	Municipal tax rate on equalized valuation	-.237
95	Pupils per teacher, 9-12	-.324

Factor O-3 also exhibits a rather high correlation with expenditure for current operation of secondary schools and slight correlation with district expenditure for debt service, school tax rate, expenditures for elementary school libraries, municipal disbursements for health and sanitation, and municipal revenue from special assessments and licenses. Significant negative correlations were found between this factor and average size of high school social studies classes, municipal tax rate, and pupil-teacher ratio in grades 9-12.

Factor P-3. -- This factor is closely associated with operation of municipal public service enterprises and closely resembles Factor G-1. The factor accounts for two percent of the total variance and 2.3 percent of the common variance. The following variables correlate significantly with Factor P-3:

	Variable	Correlation
45	Receipts per capita from municipal public service enterprises	.838
56	Municipal disbursements per capita for public service enterprises	.487
121	Average size of high school social studies classes	.191
40	Municipal revenue per capita from licenses	-.183

This factor, like Factor G-1, is relatively specific for operation of municipal service enterprises, since only two other variables show significant correlation with Factor P-3. Its slight positive correlation with average size of high school social studies classes is difficult to explain. The factor has no significant correlation with other aspects of the educational program, nor with various measures of wealth and school support.

Factor S-3. -- This factor is associated with expenditures for school lunch. However, close study of the variables which are significantly correlated with Factor S-3 indicates that it is also related to rurality. The factor accounts for 2.8 percent of the total variance and 3.3 percent of the common variance. The following variables correlate singificantly with Factor S-3:

	Variable	Correlation
148	Expenditure per pupil in A. D. M. for school lunch	.710
66	Receipts per pupil from federal sources	.635
146	Expenditure per pupil in A. D. M. for transportation	.354
7	Equalized valuation of agricultural property per capita	.252
63	Receipts per pupil from state sources	.230
103	Percent of teachers with less than four years of professional preparation	.200
139	Expenditure per pupil for education requiring orthopedic services	-.165
125	Average size of high school vocational classes	-.170
122	Average size of high school science classes	-.187
151	Expenditure per capita for public libraries	-.199
147	Expenditure per pupil in A. D. M. for health and recreation	-.247
161	Mean teacher salary, K-12	-.270
105	Percent of teachers with five years of professional preparation	-.300
112	Median years of total teaching experience, secondary teachers	-.308

The high correlations between Factor S-3, expenditure for school lunch and school district receipts from federal sources reflect federal subsidization of school lunch programs. Districts which provide lunches for pupils will, with few exceptions, receive federal aid in support of this program. The other variables which correlate significantly with Factor S-3 describe relationships which would be expected in school district serving predominantly rural areas. For example, such districts would be expected to spend more for pupil transportation, to have higher equalized valuation of agricultural property, and to receive more revenue from state sources. Similarly, rural districts would be expected to have low expenditure for education of children requiring orthopedic services, since these districts would rarely provide such programs; small high school classes, primarily because of smaller total enrollment; low expenditure for public libraries; low average teacher salary and fewer teachers with five years of professional preparation.

Specific Factors

Twenty-eight specific factors, i.e., factors with which only one variable was found to have $r \geq \pm .40$, were identified. These 28 factors account for a total of 35.75 percent of the total variance and 42.75 percent of the common variance.

Factor E-3. -- This factor describes expenditures for educational programs for educable mentally handicapped pupils. It accounts for 1.8 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor E-3:

	Variable	Correlation
141	Expenditure per pupil for education of educable mentally handicapped	.795
135	Expenditure per pupil for current operation, elementary	.294
161	Mean teacher salary, K-12	.209
65	Receipts per pupil from local tax sources	.184
137	Expenditure per pupil for elementary school library books, materials and supplies	.183
103	Percent of teachers with less than four years of professional preparation	-.199

Factor E-3 shows moderate positive correlation with expenditure for current operation of elementary schools and slight positive correlation with average teacher salary, receipts from local tax sources, and expenditures for elementary school libraries. The slight inverse relationship of Factor E-3 to percent of teachers with less than four years of professional preparation is to be expected, since few teachers who do not hold a college degree are qualified to teach such classes. The factor has no significant correlation with expenditures for other programs of special education. This lack of relationship may be due to the fact that while many school districts provide programs for educable mentally handicapped children, relatively few offer special classes for other handicapped children. The relation of variables to Factor E-3 suggests that programs for educable mentally handicapped pupils may be found in districts which spend more for current operation of elementary schools, pay higher teacher salaries and derive more revenue from local taxes. The factor has no significant correlation with equalized valuation, personal or corporate income, various municipal receipts or disbursements, or enrollment in secondary school subjects.

Factor F-3. -- This factor is closely associated with non-public school enrollment. It accounts for 1.8 percent of the total variance and 2.2 percent of the common variance. The following variables correlate significantly with Factor F-3:

	Variable	Correlation
93	Ratio of non-public to public school enrollment	.819
53	Municipal disbursements per capita for highways	.199
44	Municipal revenue per capita from commercial receipts	.192
112	Median years of total teaching experience, secondary teachers	.175

17	Net reported corporate income tax per capita	.165
103	Percent of teachers with less than four years of professional preparation	-.170
63	Receipts per pupil from state sources	-.253
34	School tax rate on equalized valuation	-.303

The inverse relationship between Factor F-3 and receipts per pupil from state sources may be explained, at least in part, by the operation of the Wisconsin state support program, which bases state equalization aid on a guaranteed valuation per pupil in A. D. M. Only public school A. D. M. is considered in computing a district's equalized valuation per pupil. Consequently, equalized valuation per pupil is greater than would be the case if all pupils were enrolled in public schools. The moderate inverse relationship between this factor and school tax rate undoubtedly reflects the lower total cost of operating public schools in districts where a high percentage of pupils are enrolled in non-public schools. It may also reflect reticence on the part of parents of pupils who attend non-public schools to pay higher taxes in support of the public schools. However, the lack of correlation between this factor and expenditure per pupil for current operation of elementary and secondary schools tends to refute the latter conclusion. The variables which show a slight positive correlation with Factor F-3 suggest that a high ratio of non-public to public school enrollment is associated with urban areas. Such areas would tend to have greater municipal revenue from commercial receipts and highways, higher corporate income, a more experienced staff of secondary teachers, and fewer teachers with less than four years of professional preparation. Factor F-3 has no significant correlation with district wealth as measured by equalized valuation or personal income, nor with class size or enrollments in various high school subjects.

Factor J-3. -- This factor describes total teaching experience of elementary school staff. The factor accounts for two percent of the total variance and 2.4 percent of the common variance. The following variables correlate significantly with Factor J-3:

	Variable	Correlation
111	Median years of total teaching experience, elementary teachers	.778
112	Median years of total teaching experience, secondary teachers	.370
33	Municipal tax rate on equalized valuation	.299
42	Municipal revenue per capita from gifts and grants	.173
65	Receipts per pupil from local tax sources	-.183
125	Average size of high school vocational classes	-.183
34	School tax rate on equalized valuation	-.194
150	Expenditure per pupil in A. D. M. for debt service	-.320

This factor also shows moderate positive correlation with total teaching experience of the secondary school staff. Its moderate positive correlation with municipal tax rate on equalized valuation suggests that experienced elementary teachers are associated with urban school systems. This, of course, reflects the urbanward movement of teachers. The inverse relationship between Factor J-3 and expenditure per pupil for debt service indicates that experienced elementary teachers are found in school districts which are not undergoing plant expansion to accommodate rapid enrollment increases. No significant correlations were found between this factor and school tax rates, professional preparation of the teaching staff, academic ability of the student body, dropouts, or enrollment in various high school subjects.

Factor M-3. -- This factor, which accounts for 1.8 percent of the total variance and 2.2 percent of the common variance, describes county tax rate. The following variables correlate significantly with Factor M-3:

	Variable	Correlation
32	County tax rate on equalized valuation	.802
5	Equalized valuation of mercantile property per capita	.328
146	Expenditure per pupil in A. D. M. for transportation	.225
63	Receipts per pupil from state sources	.186
147	Expenditure per pupil in A. D. M. for health and recreation	.174
121	Average size of high school social studies classes	-.240

The moderate positive correlation between Factor M-3 and equalized valuation of mercantile property suggests that the factor is associated with urban areas. However, it also shows a slight positive correlation with expenditures for pupil transportation, an expenditure item associated with rural areas. These relationships, however, would be typical of school districts which include an urban center, but which also serve a substantial amount of rural area. Factor M-3 also shows slight positive correlation with school district receipts from state sources and expenditures for health and recreation. No ready explanation can be advanced for the inverse relationship between this factor and average size of high school social studies classes. The factor shows no significant correlation with municipal receipts and disbursements, expenditure for current operation, average teacher salary, or high school enrollment in various subject areas.

Factor N-3. -- This factor describes equalized valuation and is very similar to Factor F-1. Factor N-3 accounts for 1.5 percent of the total variance and 1.8 percent of the common variance. The following variables correlate significantly with Factor N-3:

	Variable	Correlation
2	Equalized valuation per capita	.842
4	Equalized valuation of residential property per capita	.362

Factor Q-3. -- This factor is closely associated with high school enrollment in science classes. It accounts for 1.6 percent of the total variance and 1.9 percent of the common variance. The following variables correlate significantly with Factor Q-3:

	Variable	Correlation
130	Percent of total high school enrollment in science classes	.799
122	Average size of high school science classes	.205
63	Receipts per pupil from state sources	.194
137	Expenditure per pupil for elementary school library books, materials and supplies	.188

44	Municipal revenue per capita from commercial receipts	-.165
82	Total non-resident A. D. M.	-.224
33	Municipal tax rate on equalized valuation	-.230

The correlation between Factor Q-3 and average size of high school science classes is slight. It also shows a slight positive correlation with receipts from state sources and expenditure for elementary school libraries. The factor exhibits a slight negative relationship to municipal revenue from commercial receipts, non-resident enrollment, and municipal tax rate. No significant correlations were found between this factor and enrollment or class size in other high school subjects, nor with equalized valuation, personal or corporate income, school tax rate, or preparation or experience of the teaching staff. Rather, school districts which have a high percentage of their high school student body enrolled in science classes will have larger science classes, more revenue from state sources, higher expenditures for elementary school libraries, fewer non-resident pupils, and a lower municipal tax rate.

Factor R-3. -- This factor describes enrollment in high school vocational classes. The factor accounts for 1.4 percent of the total variance and 1.7 percent of the common variance. The following variables correlate significantly with Factor R-3:

	Variable	Correlation
133	Percent of total high school enrollment in vocational classes	.764
125	Average size of high school vocational classes	.265
85	Ratio of pupils in highest decile to total tested population	-.217

As mentioned earlier, the relationship of Variable 85 to Factor R-3 leads one to conclude that pupils of high academic ability are less inclined to enroll in vocational classes. The size of high school vocational classes is directly related to this factor. No significant correlation was found between Factor R-3 and enrollment in other high school subjects, equalized valuation, personal or corporate income, tax rates, municipal receipts and disbursements, sources of school district revenue, dropouts, professional preparation or experience of teachers, or expenditure for current operation.

Factor T-3. -- This factor describes high school dropouts and accounts for 1.5 percent of the total variance and 1.8 percent of the common variance. The following variables correlate significantly with Factor T-3:

	Variable	Correlation
92	Ratio of dropouts to enrollment in grades 9-12	.786
103	Percent of teachers with less than four years of professional preparation	.326
161	Mean teacher salary, K-12	-.175

This factor closely resembees Factor L-2, which provides a more complete description of high school dropout. It should be noted, however, that no significant correlations were found between Factor T-3 and any of the variables related to ability to support education, such as equalized valuation, personal or corporate income, tax rates, municipal receipts or disbursements, or sources of school district revenue.

Factor U-3. -- This factor describes high school enrollment in mathematics classes. It accounts for 1.4 percent of the total variance and 1.7 percent of the common variance. The following variables correlate significantly with Factor U-3:

	Variable	Correlation
128	Percent of total high school enrollment in math classes	.753
136	Expenditure per pupil for current operation, secondary	.197
95	Pupils per teacher, 9-12	-.169
125	Percent of total high school enrollment in vocational classes	-.241

This factor is very similar to Factor V-2, which also describes high school enrollment in mathematics classes. This factor also was found to have no significant correlation with any of the 26 variables related to ability to support education.

Factor V-3. -- This factor is associated with school district receipts from local non-tax sources. It accounts for 1.3 percent of the total variance and 1.5 percent of the common variance. The following variables correlate significantly with Factor V-3:

	Variable	Correlation
67	Receipts per pupil from local non-tax sources	.729
82	Total non-resident A. D. M.	.216
4	Equalized valuation of residential property per capita	.181

Receipts from local non-tax sources are derived primarily from direct payments by pupils in the form of fees, rentals, and similar assessments. The relationship of variables to Factor V-3 indicates that a high level of receipts from local non-tax sources is associated with large numbers of non-resident pupils and relatively high valuation of residential property. It should be noted that this factor shows no significant correlation with personal or corporate income, school tax rate, other sources of school revenue, municipal receipts and disbursements, or expenditure for current operation.

Factor W-3. -- This factor describes municipal revenue from commercial receipts. It accounts for 1.2 percent of the total variance and 1.5 percent of the common variance. The following variables correlate significantly with Factor W-3:

	Variable	Correlation
44	Municipal revenue per capita from commercial receipts	.672
5	Equalized valuation of mercantile property per capita	.361

This factor closely resembles Factor Q-1, which provides a more comprehensive description of variables associated with municipal revenue from commercial reseipts.

Factor Y-3. -- This factor is associated with percent of teachers with over five years of professional preparation. It accounts for 1.4 percent of the total variance and 1.6 percent of the common variance. The following variables correlate significantly with Factor Y-3:

	Variable	Correlation
106	Percent of teachers with over five years of professional preparation	.742
80	Total resident A. D. M.	.184
132	Percent of total high school enrollment in fine arts classes	.174
5	Equalized valuation of mercantile property per capita	.173
150	Expenditure per pupil in A. D. M. for debt service	-.172

The relationship of variables to Factor Y-3 suggests that school systems which have a large number of teachers with over five years of professional preparation are relatively large, have a higher percentage of the high school student body enrolled in fine arts classes, and have a relatively large amount of mercantile property valuation. The inverse relationship between this factor and expenditure for debt service hints that teachers with over five years of professional preparation are not found in rapidly growing school districts. No significant correlations were found between Factor Y-3 and equalized valuation, personal or corporate income, municipal receipts and disbursements, sources of school district revenue, average teacher salary or expenditures for current operation.

Factor Z-3. -- This factor is associated with population mobility and accounts for one percent of the total variance and 1.2 percent of the common variance. The following variables correlate significantly with Factor Z-3:

	Variable	Correlation
159	Percent of 1960 population living in a different state in 1955	.600
27	Median years of school completed by population age 25 & over	.292
88	Ratio of graduates attending four-year college to total high school graudating class	.237

This factor shows a moderate positive correlation with educational level of adults and a slight positive correlation with percent of high school graduates attending a four-year college. These relationships suggest that a school district in which the population is relatively mobile will have a well-educated adult population and a relatively large number of high school graduates who attend college. No significant correlations were found between Factor Z-3 and equalized valuation, personal or corporate income, enrollment and class size in various high school subjects, academic ability of the student body, or expenditure for current operation.

Factor AA-3. -- This factor describes academic ability of the student body. It accounts for 1.3 percent of the total variance and 1.6 percent of the common variance. The following variables correlate significantly with Factor AA-3:

	Variable	Correlation
86	Ratio of pupils in lowest decile to total tested population	.770
88	Ratio of graduates attending a four-year college to total high school graduating class	-.178
85	Ratio of pupils in highest declie to total tested population	-.249

The relationship of Variable 85 to this factor is expected, as is the slight negative correlation between Factor AA-3 and ratio of graduates attending a four-year college.

Factor BB-3. -- This factor, which accounts for 1.6 percent of the total variance and 1.9 percent of the common variance, describes expenditure for remedial speech instruction. The following variables correlate significantly with Factor BB-3:

	Variable	Correlation
144	Expenditure per pupil for remedial speech education	.724
147	Expenditure per pupil in A. D. M. for health and recreation	.240
112	Median years of total teaching experience, secondary teachers	.193
161	Mean teacher salary, K-12	.167
139	Expenditure per pupil for education requiring orthopedic services	.163
103	Percent of teachers with less than four years of professional preparation	-.169
146	Expenditure per pupil in A. D. M. for transportation	-.279

The relationship of variables to Factor BB-3 indicates that programs of remedial speech education are more likely to be found in urban school districts. Rural school districts employ more teachers who do not hold a college degree and spend more for pupil transportation. Urban school districts, on the other hand, spend more for pupil health and recreation, have a more experienced staff of secondary teachers, and pay a higher average teacher salary.

Factor CC-3. -- This factor is associated with programs for educating the trainable mentally handicapped. It accounts for 1.4 percent of the total variance and 1.7 percent of the common variance. The following variables correlate significantly with Factor CC-3:

	Variable	Correlation
140	Expenditures per pupil for education of trainable mentally handicapped	.715
82	Total non-resident A. D. M.	.233
50	Municipal disbursements per capita for protection	.229
40	Municipal revenue per capita from licenses	.194
105	Percent of teachers with five years of professional preparation	.174
161	Mean teacher salary, K-12	.167

The relationship of variables to Factor CC-3 indicates that school districts which provide educational programs for trainable mentally handicapped pupils tend to serve a relatively large number of non-resident pupils, employ more teachers with five years of professional preparation, and pay a higher average teacher salary. The slight correlation of this factor with municipal disbursements for protection and municipal revenue from licenses suggests again that programs of this type are more likely to be found in school districts serving urban areas. Study of the school systems included in the sample also indicates that educational programs for trainable mentally handicapped children are generally found in larger school systems where there exist a sufficient number of students to make this type of program economically feasible. No statistically significant correlations were found between this factor and equalized valuation, personal or corporate income, sources of school district revenue, or expenditure for current operation.

Factor DD-3. -- This factor is closely related to corporate income. It accounts for 1.8 percent of the total variance and 2.1 percent of the common variance. The following variables correlate significantly with Factor DD-3:

	Variable	Correlation
17	Net reported corporate income tax per capita	.812
65	Receipts per pupil from local tax sources	.221
161	Mean teacher salary, K-12	.185
50	Municipal disbursements per capita for protection	.167
111	Median years of total teaching experience, elementary teachers	-.168
63	Receipts per pupil from state sources	-.187
66	Receipts per pupil from federal sources	-. 94
34	School tax rate on equalized valuation	-.327

The moderate negative correlation between Factor DD-3 and school tax rate indicates that school tax rates decrease as corporate income within the school district increases. It was stated earlier that net corporate income tax and equalized valuation of manufacturing property are closely correlated. However, the relationship of variables to Factor DD-3 does not indicate that a large amount of corporate income dampens school support, since receipts from local tax sources shows a slight positive correlation with the factor and the latter has no significant correlation with expenditure per pupil for current operation. The factor is inversely related to receipts from state and federal sources and has a slight positive correlation with average teacher salary. It is of interest to note that the factor has no significant correlation with equalized valuation, personal income, or municipal and county tax rates.

Factor EE-3. -- This factor is specific for municipal revenue from licenses. It accounts for .7 percent of the total variance and .8 percent of the common variance. The only variable having significant correlation with Factor EE-3 was Variable 40 (municipal revenue per capita from licenses), with r = .547.

Factor FF-3. -- This factor is associated with miscellaneous municipal revenue. It accounts for 1.4 percent of the total variance and 1.6 percent of the common variance. The following variables correlate significantly with Factor FF-3:

	Variable	Correlation
43	Municipal revenue per capita from all other general receipts	.757
66	Receipts per pupil from federal sources	.231
7	Equalized valuation of agricultural property per capita	.166

125	Average size of high school vocational classes	-.177
150	Expenditure per pupil in A. D. M. for debt service	-.181

Factor FF-3 shows slight positive correlation with receipts from federal sources and equalized valuation of agricultural property and a slight negative correlation with average size of high school vocational classes and expenditures for debt service. Because Factor FF-3 represents a composite of miscellaneous municipal receipts, it is difficult to generalize the relationship of variables to this factor.

Factor GG-3. -- This factor is of limited importance, accounting for only .5 percent of the total variance and .6 percent of the common variance. Its closest relationship is to non-resident enrollment, but the relationship is far from perfect. The slight negative correlation between this factor and percent of teachers with less than four years of professional preparation hints that districtswith a large number of tuition students have fewer teachers who do not hold a college degree. The following variable correlate significantly with Factor GG-3:

	Variable	Correlation
82	Total non-resident A. D. M.	.406
103	Percent of teachers with less than four years of professional preparation	-.169

Factor HH-3. -- This factor is associated, though not closely, with expenditures for elementary school libraries. It accounts for .7 percent of the total variance and .8 percent of the common variance. The following variables correlate significantly with Factor HH-3:

	Variable	Correlation
137	Expenditures per pupil for elementary school library books, materials and supplies	.437
27	Median years of school completed by population age 25 and over	.276
119	Average size of high school English classes	.204
53	Municipal disbursements per capita for highways	-.169
122	Average size of high school science classes	-.182

The factor shows a slight positive correlation with educational level of the adult population and with average size of high school English classes. It exhibits a slight negative correlation with municipal disbursements for highways and average size of high school science classes. No significant correlations were found between this factor and equalized valuation, personal or corporate income, tax rate, sources of school district revenue, or expenditures for current operation.

Factor II-3. -- This factor is associated with school district size as reflected in total enrollment. The factor accounts for one percent of the total variance and 1.2 percent of the common variance. The following variables correlate significantly with Factor II-3:

	Variable	Correlation
80	Total resident A. D. M.	.613
147	Expenditure per pupil in A. D. M. for health and recretion	.258

106	Percent of teachers with over five years of professional preparation	.184
33	Municipal tax rate on equlized valuation	.179
143	Expenditure per pupil for education of deaf and hard of hearing	.179

The relationship of variables to Factor II-3 suggests that school districts which enroll a large number of pupils spend more for pupil health and recreation, employ more teachers with over five years of professional preparation, have higher municipal tax rates, and spend more on programs for education of the deaf and hard of hearing. The factor shows no significant correlation with equalized valuation, personal or corporate income, school tax rate, expenditure for current operation, expenditure for other special education programs, or class size or enrollment in various high school subjects.

Factor KK-3. -- This factor is associated with secondary school pupil-administrator ratio and accounts for 1.2 percent of the total variance and 1.4 percent of the common variance. It is very similar to Factor HH-2. The following variables correlate significantly with Factor KK-3:

	Variable	Correlation
100	Pupils per administrator, 9-12	.690
95	Pupils per teacher, 9-12	.231
135	Expenditure per pupil for current operation, elementary	-.178

Factor LL-3. -- This factor accounts for .8 percent of the total variance and one percent of the common variance. It is associated with municipal revenue from gifts and grants and also shows a slight positive correlation with percent of teachers with less than four years of professional preparation. The following two variables correlate significantly with Factor LL-3:

	Variable	Correlation
42	Municipal revenue per capita from gifts and grants	.586
103	Percent of teachers with less than four years of professional preparation	.203

Factor PP-3.-- This factor is associated with school tax rate. It accounts for .7 percent of the total variance and .8 percent of the common variance. The following variables correlate significantly with Factor PP-3:

	Variable	Correlation
34	School tax rate on equalized valuation	.510
150	Expenditure per pupil in A. D. M. for debt service	.192
95	Pupils per teacher, 9-12	-.170

The nature of the relationship between this factor and expenditure for debt service is undoubtedly a function of the Wisconsin state support program, which provides no state support for capital outlay or debt retirement. Consequently, the entire tax levy required for debt service is borne by the school district and is directly reflected in the school tax rate. There is a slight inverse correlation between Factor PP-3 and secondary school pupil-teacher ratio, suggesting that a low pupil-teacher ratio is associated with a higher local tax rate. The factor shows no significant correlation with equalized valuation, personal or corporate income, sources of school district revenue, municipal receipts and disbursements, enrollment or class size in various high school subjects, or expenditure for current operation.

Factor QQ-3. -- This factor describes school district revenue from state sources and accounts for 1.1 percent of the total variance and 1.3 percent of the common variance. The following variables correlate significantly with Factor QQ-3:

	Variable	Correlation
63	Receipts per pupil from state sources	.592
103	Percent of teachers with less than four years of professional preparation	.303
150	Expenditure per pupil in A. D. M. for debt service	-.166
5	Equalized valuation of mercantile property per capita	-.171
4	Equalized valuation of residential property per capita	-.180

Factor QQ-3 exhibits a moderate positive correlation with percent of teachers having fewer than four years of professional preparation and slight negative correlations with expenditure for debt service, equalized valuation of mercantile property, and equalized valuation of residential property. The relationship of variables to this factor suggests that school districts which receive more revenue from state sources employ a larger number of teachers with less than four years of professional preparation, spend less for debt service, and have a lower proportion of their total equalized valuation in the form of mercantile and residential property. This factor also shows no significant correlation with personal or corporate income, total equalized valuation, municipal receipts and disbursements, enrollment or class size in various high school subjects or expenditures for current operation.

Factor UU-3. -- This factor is descriptive of expenditures for public libraries. It accounts for 1.3 percent of the total variance and 1.6 percent of the common variance.and closely resembles Factor G-2. The following variables correlate significantly with Factor UU-3:

	Variable	Correlation
151	Expenditure per capita for public libraries	.703
147	Expenditure per pupil in A. D. M. for health and recreation	.185
148	Expenditure per pupil in A. D. M. for school lunch	-.177
150	Expenditure per pupil in A. D. M. for debt service	-.271

Factor XX-3. -- This factor accounts for only .4 percent of the total variance and .5 percent of the common variance. The only variables showing significant correlation with Factor XX-3 is Variable 33 (municipal tax rate on equalized valuation), which has r = .413.

Factors Destroyed by Rotation

Eleven factors were identified with which no variable was found to have $r \geq \pm .40$. These 11 factors account for 2.63 percent of the total variance of the sample and 3.14 percent of the common variance. Consequently, these 11 factors are of relatively little importance.

Factor X-3. -- The only variable which has significant correlation with Factor X-3 is 147 (expenditure per pupil in A. D. M. for health and recreation) with r = .394.

Factor JJ-3. -- Only Variable 121 (average size of high school social studies classes) was found to have significant correlation with Factor JJ-3. Its correlation with the factor is .385.

Factor MM-3. -- Only Variable 88 (ratio of graduates attending a four-year college to total high school graduating class) was found to be correlated with Factor MM-3 at a statistically significant level. Its correlation with the factor is .325.

Factor NN-3. -- Two variables were found to have significant correlation with this factor. Variable 105 (percent of teachers with five years of professional preparation) was found to have r = .358, while 112 (median years of total teaching experience, secondary teachers) was found to have r = .331.

Factor OO-3. -- Variable 85 (ratio of pupils in highest decile to total tested population) was found to have r = .297 with Factor OO-3. No other variables were found to have significant correlation with this factor.

Factor TT-3. -- The only variable showing significant correlation with Factor TT-3 is Variable 139 (expenditure per pupil for education requiring orthopedic services), with r = .375.

Other factors. -- No statistically significant correlations were found between the 70 variables and the following factors: Factor RR-3, Factor SS-3, Factor VV-3, Factor WW-3, and Factor YY-3.

The results of the three factor analyses reported in this chapter confirm that study of educational finance is complicated by the intricate pattern of relationships which exist between variables which measure wealth in the form of property or income, sources of school support, expenditures for education and educational programs. In general, no close relationships were found between municipal receipts and disbursements and variables relating to edcucational support, educational expenditures, or educational program. The factors which were identified provide little support for the view that state support for municipal services will have a salutary effect on school support or vice versa. It is of interest to note that several factors extracted in the analysis of a combination of need and ability variables closely resembled factors which had previously been identified in the separate analyses of ability and need variables. The fact that very few factors were identified which had signifcant correlation with a large number of the variables under study, and that such factors accounted for a relatively small percentage of the variance of the sample, indicates that it is unsafe to assume that adequate consideration will be given all variables related to the financing of education through use of a limited number of variables to measure ability to support education and need for educational services. Rather, the results of factor analysis lend support to the view that if particular results are desired through the operation of a state support program, then such results must be specifically encouraged in the design of the program. Finally, one must note that the variables employed in factor analysis reflect existing conditions. They reflect decisions made relative to expenditure in the public sector in the light of existing state and federal grants-in-aid, shared taxes, and other sources of municipal and school district revenue. If the services provided by school districts and municipalities were supported only by local revenue sources, it is quite probable that the relationships identified would be altered substantially.

Discriminant Analysis

The 104 school districts employed in this phase of the investigation were divided into six classes of school district. The utility of this taxonomy was tested by submitting the data to discriminant analysis. The purpose of this statistical treatment was to determine whether the six classes of school district actually represent different populations, or whether they are, in fact, drawn from the same population and consequently could be treated alike in a state support model. In each case the null hypothesis, i.e., there exist no statistically significant differences in the population from which the school districts are drawn, was posed. The utility of an eight-class taxonomy modeled after the classification of cities employed by Brazer was tested using the same procedure.[2]

Discriminant analyses were made of the variables categorized as related to ability to support education and of the variables categorized as related to need for educational services employing the six school district classification developed by the investigators and the eight school district classification modeled after Brazer's classification of cities. In addition, a discriminant analysis of the combination of ability and need variables employed in the final factor analysis was conducted. However, variables which measure gross population size were eliminated in running the discriminant analysis, since population size was one of the primary characteristics employed in defining the classes.

A standard discriminant analysis program for the CDC 1604 computer was employed for the statistical treatment. The computer program is based on the theoretical framework described by Rao.[3] Since the program would accommodate a limit of 70 variables, it was necessary to eliminate some variables included in the initial array in each category. The program prints the total covariance matrix, the within-group covariance matrix, discriminant functions for each group, D-squares and associated F values for each pair of groups, and an F ratio for the total sample.

Discriminant Analysis of Ability Variables

Sixty-seven variables related to ability to support education were employed. The following nine variables were eliminated from the original list of 76 for reasons discussed previously: 1, 8, 9, 15, 19, 30, 46, 48, and 60. The null hypothesis was rejected for the total sample, as well as for all pairs of district classes except large city-medium city, large city-small city, and large city-established suburb. Since the large city class contained only one representative, comparisons between large city and other district classes are of limited value. For the total sample, an F ratio of 3.430, which is significant at beyond the .01 level with 335 and 165.25 d.f., was found. D-squares and F ratios for each pair of groups in six school district classes are shown in Table 5.12.

TABLE 5.12

COMPARISON BY CLASS OF DISTRICT OF D-SQUARES AND ASSOCIATED F RATIOS FOR 15 PAIRED CLASSES BASED ON 67 VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION

Dist. Class*	Large City		Medium City		Small City		Estab. Suburb		Developing Suburb	
	D-Square	F	D-Square	F	D-Square	F	D-Square	F	D-Square	F
MC	282.77	1.30	--	--						
SC	340.17	1.59	44.52	2.01^a	--	--				
ES	241.68	1.01	148.28	3.15^b	200.01	4.60^b	--	--		
DS	659.31	2.95^b	248.32	7.89^b	242.14	8.65^b	351.40	6.65^b	--	--
ASC	360.44	1.72^a	80.49	4.71^b	32.21	2.37^b	219.38	5.70^b	291.43	12.71^b

*District Code:
MC = Medium City
SC = Small City
ES = Established Suburb
DS = Developing Suburb
ASC = Agricultural Service Center

[a] Significant beyond the .05 level

[b] Significant beyond the .01 level

It is apparent that statistically significant differences, as measured by variables related to ability to support education, exist among most of the six classes. Excluding comparisons involving the large city, differences among district classes were statistically significant at well beyond the .01 level with the exception of the medium city-small city pair, where the F ratio was significant beyond the .05 level.

Discriminant analysis of the 104 school districts grouped according to the modified Brazer classification produced results similar to those found for the six-class taxonomy. An F ratio of 2.474, which is significant at the .01 level with 469 and 222.77 d.f., was found for the total sample. D-square and F ratios for each pair of groups are given in Table 5.13. No statistically significant differences were found between major core city and any other class with the exception of the high income suburb, where the difference is significant at the .05 level. Also, no significant difference was found between minor core city and major independent city. Differences between low income suburb-major independent city are significant at the .05 level and differences between all other pairs are significant at the .01 level.

TABLE 5.13

COMPARISON BY CLASS OF DISTRICT OF D-SQUARES AND ASSOCIATED F RATIOS FOR 28 PAIRED CLASSES BASED ON 67 VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION

District Class	Major Core City		Minor Core City		High Income Suburb		Low Income Suburb	
	D-Square	F	D-Square	F	D-Square	F	D-Square	F
Minor Core City	236.99	.92	--	--				
High Income Suburb	505.20	1.96[a]	499.10	5.82[b]	--	--		
Low Income Suburb	411.48	1.65	239.21	3.04[b]	324.18	4.12[b]	--	--
Industrial Suburb	330.72	1.40	176.19	2.74[b]	398.09	6.19[b]	100.85	1.76[a]
Major Independent City	245.08	1.04	56.48	.88	385.33	5.99[b]	146.42	2.56[b]
Minor Independent City	292.32	1.26	145.19	2.39[b]	475.98	7.84[b]	161.59	3.01[b]
Other Urban Places	345.48	1.58	137.71	2.94[b]	473.71	10.13[b]	158.21	3.99[b]

TABLE 5.13 (Continued)

District Class	Industrial Suburb		Major Independent City		Minor Independent City	
	D-Square	F	D-Square	F	D-Square	F
Minor Core City						
High Income Suburb						
Low Income Suburb						
Industrial Suburb	--	--				
Major Independent City	87.66	2.04[a]	--	--		
Minor Independent City	101.10	2.57[b]	63.72	1.62[b]	--	--
Other Urban Places	70.19	2.77[b]	58.22	2.30[b]	56.26	2.59[b]

[a] Significant beyond the .05 level

[b] Significant beyond the .01 level

Discriminant Analysis of Need Variables

Sixty-seven variables related to need for educational services were employed in a second application of discriminant analysis to the two classifications of school districts. The following 17 variables were eliminated from the original list of 84 for reasons discussed previously: 77, 78, 79, 80, 81, 82, 83, 84, 97, 98, 113, 115, 117, 153, 154, 157, and 158. Again, the null hypothesis was rejected for the total sample. An F ratio of 3.805 was found for the total sample. This value of F is significant beyond the .01 level with 335 and 165.26 d.f.

Statistically significant differences among the six district classes were found for all but one pairing. No significant difference was found between large city-medium city. In comparing large city-small city and large city-established suburb, differences were statistically significant at the .05 level; in all other comparisons between categories the differences were statistically significant at the .01 level. Therefore, the null hypothesis was accepted in one case, rejected at the .05 level in two cases, and rejected at the .01 level in 12 cases. Table 5.14 gives D-squares and F ratios for each pair of groups in the six school district classes.

TABLE 5.14

COMPARISON BY CLASS OF DISTRICT OF D-SQUARES AND ASSOCIATED F RATIOS FOR 15 PAIRED CLASSES BASED ON 67 VARIABLES RELATED TO NEED FOR EDUCATIONAL SERVICES

Dist	Large City		Medium City		Small City		Estab. Suburb		Developing Suburb	
Class*	D-Square	F	D-Square	F	D-Square	F	D-Square	F	D-Square	F
MC	334.01	1.53	--	--						
SC	396.74	1.85[a]	113.44	5.12[b]	--	--				
ES	431.01	1.80[a]	225.12	4.79[b]	115.90	2.66[b]	--	--		
DS	497.05	2.22[b]	296.05	9.41[b]	158.11	5.65[b]	158.77	3.00[b]	--	--
ASC	477.97	2.28[b]	148.36	8.68[b]	40.54	2.98[b]	146.86	3.82[b]	159.50	6.96[b]

*District Code: See Table 5.12

[a] Significant beyond the .05 level

[b] Significant beyond the .01 level

The results obtained when the 104 districts were grouped according to the modified Brazer classification were not as clear-cut. For the total sample an F ratio of 2.334 was found. This ratio is significant at the .01 level with 469 and 222.77 d.f. No statistically significant differences were found between the following pairs: major core city-minor core city, major core city-major independent city, minor core city-major independent city, low income suburb-industrial suburb, low income suburb-minor independent city, and low income suburb-other urban places. Differences statistically significant at the .05 level were found for four pairs: major core city-industrial suburb, major core city-minor independent city, industrial suburb-minor independent city and minor independent city-other urban places. For all other class pairings, differences were statistically significant at the .01 level. Therefore, the null hypothesis was accepted in six cases, rejected at the .05 level in four cases, and rejected at the .01 level in 18 cases. D-squares and F ratios for the 28 pairings are given in Table 5.15.

Discriminant Analysis of a Combination of Need and Ability Variables

The 26 variables related to ability to support education and 43 of the 44 variables related to need for educational services employed in the final factor analysis were also subjected to discriminant analysis based on the six school district classes defined by the investigators. (Variable 80, which measured size of population, was eliminated.) The null hypothesis was rejected for the total sample, since the F ratio of 3.200 found for the total sample is significant at beyond the .01 level for 345 and 155.31 d.f. The D-squares and F ratios for each of the 15 category pairings is given in Table 5.16. No statistically significant differences were found between the large city and any of the other five district classes. However, differences between all other pairs were significant at the .01 level with the exception of small city-established suburb, where the difference was significant at the .05 level. Consequently, the null hypothesis was accepted in five cases, rejected at the .05 level in one case, and rejected at the .01 level in nine cases.

TABLE 5.16

COMPARISON BY CLASS OF DISTRICT OF D-SQUARES AND ASSOCIATED F RATIOS FOR 15 PAIRED CLASSES BASED ON 69 VARIABLES RELATED TO ABILITY TO SUPPORT EDUCATION AND NEED FOR EDUCATIONAL SERVICES

Dist	Large City		Medium City		Small City		Estab. Suburb		Developing Suburb	
Class*	D-Square	F	D-Square	F	D-Square	F	D-Square	F	D-Square	F
MC	143.65	.60	--	--						
SC	135.11	.57	86.40	3.55^b	--	--				
ES	166.04	.63	170.08	3.29^b	99.51	2.08^a	--	--		
DS	387.47	1.58	277.82	8.03^b	226.59	7.37^b	298.63	5.14^b	--	--
ASC	161.74	.70	142.59	7.59^b	48.39	3.24^b	148.18	3.51^b	246.56	9.79^b

*District Code: See Table 5.12

[a]Significant beyond the .05 level

[b]Significant beyond the .01 level

To determine the impact of gross population size, all 70 variables were utilized in a final application of discriminant analysis. With the inclusion of Variable 80 (total resident average daily membership), the array of variables effectively distinguishes between the large city and all other

TABLE 5.15

COMPARISON BY CLASS OF DISTRICT OF D-SQUARES AND ASSOCIATED F RATIOS FOR 28 PAIRED CLASSES BASED ON 67 VARIABLES RELATED TO NEED FOR EDUCATIONAL SERVICES

District Class	Major Core City		Minor Core City		High Income Suburb		Low Income Suburb	
	D-Square	F	D-Square	F	D-Square	F	D-Square	F
Minor Core City	313.91	1.22	--	--				
High Income Suburb	649.46	2.52^b	290.18	3.38^b	--	--		
Low Income Suburb	557.87	2.23^b	360.02	4.58^b	204.62	2.60^b	--	--
Industrial Suburb	499.66	2.12^a	295.77	4.60^b	186.52	2.90^b	63.99	1.12
Major Independent City	374.35	1.59	97.34	1.51	234.59	3.65^b	188.82	3.30^b
Minor Independent City	501.41	2.16^a	257.59	4.24^b	174.75	2.88^b	87.35	1.63
Other Urban Places	511.60	2.34^b	253.16	5.41^b	175.52	3.75^b	63.76	1.61

TABLE 5.15 (Continued)

District Class	Industrial Suburb		Major Independent City		Minor Independent City	
	D-Square	F	D-Square	F	D-Square	F
Minor Core City						
High Income Suburb						
Low Income Suburb						
Industrial Suburb	--	--				
Major Independent City	132.84	3.10^b	--	--		
Minor Independent City	77.69	1.98^a	106.34	2.71^b	--	--
Other Urban Places	65.23	2.57^b	129.98	5.13^b	41.56	1.91^a

^{a}Significant beyond the .05 level

^{b}Significant beyond the .01 level

school district classes. In fact, when gross population size is included, all category pairs exhibit differences statistically significant at the .01 level with the exception of small city-established suburb, where the difference is still significant at the .05 level.

It is apparent, on the basis of discriminant analysis, that real differences, other than those due to gross size, exist between the various classes of school district which were identified. Since the large city (or major core city) class contained but one representative, little can be said about differences between this class and others which were studied. The six classes appear to distinguish between various types of school district somewhat more clearly than did the eight classes modeled after Brazer's classification of cities. While the evidence points to the fact that differences between school districts exist, further study is needed to identify the variables which discriminate best among classes of school district.

Notes to Chapter V

1. Harris, loc. cit.

2. Brazer, op. cit., pp. 61-64.

3. C. R. Rao, Advanced Statistical Methods in Biometric Research. (New York: Wiley, 1952), pp. 261-62.

CHAPTER VI

PATTERNS AND IMPACT OF EDUCATIONAL SUPPORT IN FOUR STATES

In the previous chapter, data from 104 Wisconsin school districts were analyzed in an effort to identify variables influencing educational finance. The analysis revealed a surprisingly large degree of distinctiveness among the districts. In order to test this condition in other states, a more intensive look was taken at the classes of district in three other states.

Prior to the presentation and analysis of data, information regarding the educational system in each of the four states is given to provide a better understanding of the support program and the framework within which it operates. Each program of support combines the resources of the state and local districts,and relates to municipal finance uniquely. Points of difference include percent of support from state sources, purposes of the program, methods of distribution, gross amounts distributed, and sources of revenue.

In this chapter, the process used to select the four states is described. Information is presented which is pertinent to the operation of the support program in each state. Included are the general characteristics of the state, sources of state and local revenue for public services, and the historical development of public education.[1] An analysis of the effects of rotating the support programs among the states is then presented. Each state support program was applied to the districts of the three other states. Comparisons were then made of each support program in terms of its impact on classes of district. Data for the 1962-63 school year were used.

Selecting the Four States

The three additional states included in the study are New Jersey, Oregon, and Tennessee. They were selected on the following bases:

1. Geographic location; i.e., east, west, south and midwest (Wisconsin).
2. Comparability of the pattern of school district organization.
3. Uniqueness of the state support pattern.

The selection of a southern state posed a problem. Tennessee was picked as a state with a pattern of school district organization somewhat comparable to that of the other three states. It was essential that each state selected permit analysis based on the classes of school district.

The third criterion was applied in order to include programs typical of different types of support found in the 50 states. New Jersey was selected as typical of the foundation programs advocated originally by Strayer-Haig. Oregon's program places major emphasis on flat grants to all districts. Tennessee's program places major emphasis on experience and training of certified staff as measures of quality and distributes state funds according to pupils in average daily attendance. The Tennessee program is unique in that support for capital outlay is included with current expense. The Wisconsin formula for distributing state monies has as its major elements equalization and incentive. There is provision also for cost-sharing, with the initiative for cost determination at the local level. In addition, the Wisconsin program includes flat grants using average daily membership of pupils as the basis for distribution.

Attention was also given to the basis on which the fiscal capacity of districts is measured. While three of the states employ in varying ways property valuations, one state uses an economic index composed of motor vehicle registration payments, farm products sold, persons gainfully employed, and sales tax collections to determine the estimated relative value of locally-assessed property.

New Jersey

New Jersey ranks forty-sixth in size with an area of 7,522 square miles. Although known as the Garden State, its income from farming has dwindled in recent years. Commuters live in the areas of easy rail accessibility to New York City and Philadelphia. Industry, formerly confined to the largest cities, and mainly heavy in nature, now exists throughout the state and includes more light industry. Tourism is concentrated along the coast and around lakes in the northern part of the state. New Jersey is a wealthy state, evidenced by the fact that per-capita personal income in 1962 was $2,887. Projections to 1970 indicate a very slight gain. The United States Census of 1960 enumerated 6,066,782 persons for an increase over 1950 of 25.5 percent. Of the total, only 11.4 percent was non-urban. Eighty-one percent of the population is native-born white, 10 percent is foreign-born white, and 9 percent is non-white. Projections of the population for the period 1960-1970 indicate that New Jersey can expect 7,655,000 residents in 1970, an increase of 26.2 percent over the 1960 figures.

Development of Public Education

Opportunities for education were severely limited in New Jersey until late in the nineteenth century. Only the children of the wealthy and leisure class attended the few elementary schools and the seven private academies which constituted the educational facilities available in 1790. Nevertheless, two of the nine colleges founded in America before the Revolution were founded in this state: Princeton in 1746 and Rutgers in 1766.

The move toward public education began in 1817 with the establishment of a public school fund by the state. In 1829 a comprehensive school law was passed requiring local governments to raise money for local school purposes. The office of state superintendent was established in 1846, and the state board of education was founded in 1867. However, free public education as known today did not begin until 1871, when fees charged for public school attendance were abolished. Rural education, with its one-room schools, continued dominant until World War I and was largely responsible for limiting the number of students attending high school. A compulsory school attendance bill was passed in 1913 requiring all children between the ages of 7 and 16 to attend school.

New Jersey had approximately 1,600 public elementary schools, with more than 881,250 pupils enrolled in 1962-63. Public high schools enroll approximately 293,750 students in 325 buildings. Additional educational opportunity is provided by 450 elementary and 80 secondary parochial schools, with about 200,000 elementary and 70,000 secondary pupils enrolled.

The Commissioner of Education is the title now given the chief state school official, a gubernatorial appointee and the administrative head of the State Department of Education serving under a 12-member policy-making State Board of Education. This department coordinates all the educational activities of the state. The State Department of Education supervises all tax-supported schools, apportions school aids to the recipient districts, issues teaching certificates, and licenses all private non-sectarian schools. The Commissioner of Education, with the advice and consent of the State Board of Education, appoints the county superintendent of schools in each of the 21 counties. The county superintendent exercises general supervision over the public schools of the county under his charge in accordance with rules and regulations prescribed by the Commissioner and the State Board of Education.

In Chapter 6 districts (primarily cities), the mayor appoints the members of the board of education; in Chapter 7 districts (primarily townships and small municipalities) and in Chapter 8 districts (regional school districts), voters elect the members. Boards have the authority generally delegated local boards of education, including the direction of finances and general policies of the school districts, selection of teachers and administrative personnel, procurement of materials, determination of the curriculum, and expulsion of pupils.

State and Local Revenue

Taxes are levied and collected primarily by local governments. Exclusive of the federal taxes, the state ordinarily collects one-quarter and the local government three-quarters of all taxes paid. Most of the state tax revenues come from selective sales taxes on motor fuels, alcoholic beverages, cigarettes, insurance, parimutuels, licenses, taxes on motor vehicles, motor vehicle operators, and corporations. However, substantial sums were added to the tax revenue from an inheritance tax and a corporation income tax which went into effect in 1959. The state has neither an individual income tax nor a general retail sales tax. New Jersey's tax collections amounted to $431,244,000 in 1962, an increase of 128.2 percent over 1953; 58.2 percent came from special excises and gross receipts, 7.3 percent from income, 28.3 percent from licenses, and 6.1 percent from other sources. Per-capita tax collection for 1962 was $69.07, which expressed as a percent of personal income was 2.4 percent in 1962. Per-capita total tax collections of state and local governments in 1961 was $226.14 which ranked the state fourteenth in the nation and 6.5 percent above the national average. At the local level, most tax collections are made by municipalities. They, in turn, remit a large part of the property tax receipts to school districts and to the counties.

Financial Support of Education

The constitution of New Jersey prohibits the dedication of taxes. Revenue receipts from the state level in 1959-60 amounted to $127,508,000. A very small percent of this total is derived from the permanent school endowment. The percent of revenue for public elementary and secondary schools received from the state has remained fairly constant at about 23 percent. It is estimated that 74.9 percent of the revenue receipts needed for public schools in 1962-63 will come from local and intermediate units of government. Intermediate district revenues are used for county vocational schools. There is no tax rate limit for current operating expenses, nor for school indebtedness in intermediate units. An intermediate district has no revenue source other than property taxes. Levies on property produce 98.5 percent of the revenue used by local authorities to operate schools. It is estimated that $510,000,000 came from this source during 1962-63. Taxes on property for debt service may be levied without a public election since the approval of the bond issue also authorizes the board of education to levy annually the amount required for debt service. Tax levies for current operating expenses may be approved by a vote of the people in many of the school districts, but in others the Board of School Estimates approves the budget. Federal aid to vocational education, school lunch programs, and grants for other federally-supported programs was approximately fifteen million dollars or 2.3 percent of all revenue received in 1962-63. This percent is characteristic of New Jersey's participation in federal aid programs in recent years.

The first definite step taken by the state legislature to provide a measure of support to public education was in 1817, when "an act to create a fund for the support of free schools" was passed and became known as the State School Fund. During the 1800's state-owned stock dividends, monies received from the sale of state lands, and varying percents of state tax collections were set aside for the purpose of maintaining this fund. The original act directed that monies be apportioned among the several counties in relation to the population and in turn among the townships in the ratio of the number of children between the ages of 5 and 18. The amount to be apportioned grew from $20,000 in 1829 to $100,000 in 1895. A provision in the Special School Act of 1903 called for the school fund to provide for the payment of salaries of county superintendents. With the adoption in 1947 of a new state constitution, the dedication of any taxes or revenues for any purposes was prohibited.

The state aid program consists of what is termed equalization aid and minimum aid. Number of pupils in resident average daily enrollment (A. D. E.) is the unit of measure in each program. The foundation program applies to all school districts and is $200 per year per pupil in A. D. E. To determine the equalization aid due the district, the local fair share must be deducted from this sum. This is determined as a sum equal to five mills per dollar on the equalized valuation of the school district as certified by the Director of the State Division of Taxation for that year, plus 25 percent of the amount of shared taxes payable to each municipality within the school district as certified by such director. Equalization aid is then paid to the school district in the amount of the excess of the foundation program over the local fair share. However, no district is paid less than $50 per pupil in A. D. E. A limitation is placed on school districts to the extent that if the amount raised by local taxation for current operation is less than the local fair share, and the amount provided by such budget is less than $200 per pupil in A. D. E. during the next preceding school year, the district shall not be paid equalization or minimum aid. To qualify for aids, school districts must comply with the regulations and standards prescribed by law, or formulated by the Commissioner of Education or the State Board of Education. There is also a provision for emergency aid in the amount of $250,000 to be distributed by the Commissioner on approval of the State Board of Education to meet unforseeable conditions in school districts. In addition, New Jersey has several special aids.

Oregon

Oregon ranks tenth in size in the nation, with an area of 96,981 square miles. Its economy is built largely upon agricultural lands, forests, and water power. Since 1900, lumber has been the chief payroll industry. The principal agricultural crop continues to be wheat. With the development of hydroelectric power in 1937, and especially since World War II, there has been an increase in specialized types of manufacturing requiring large quantities of such power. Of those employed in non-agricultural pursuits, 30 percent are in manufacturing, 23 percent in wholesale and retail trade, 16 percent in government, 16 percent in services, 10 percent in transportation, and 5 percent in construction. Per-capita personal income in 1962 was $2,229. The National Planning Association indicates that the state's population is now growing faster than personal income and per-capita income relative to the U. S. average may decline through the 1960's.

Oregon's population growth has occurred primarily through in-migration. The period of greatest numerical increase was the decade 1940-1950 when over 400,000 were added, for an increase of nearly 40 percent. A population increase of 16.3 percent is reported for the decade 1950-1960. Of the 1,768,687 people in the state in 1960, 62.2 percent resided in urban areas. Urban residents constituted 54 percent of the state's population in 1950. Ninety-three percent of the population is native-born white, five percent foreign-born white, and two percent non-white. The major countries of origin of the foreign born are Canada, Germany, Sweden, England, Russia, and Norway. The state's population is expected to rise to 2,019,000 by 1970, an increase of 14.2 percent. This is slightly less than the projected national increase of 19.1 percent.

Development of Public Education

Reorganization has reduced the number of school districts in Oregon from 2,094 in 1905 to less than 500 at present. Between 1900 and the school year 1962-63, enrollment in the state's public elementary and secondary schools increased from 89,405 to 412,500. School attendance is compulsory for those between the ages of 7 and 18, if the twelfth year of school has not been completed. If legally employed, those between the ages of 16 and 18 must attend part-time or evening schools.

The State Board of Education is appointed by the governor, subject to confirmation by the state Senate, and in turn appoints the Superintendent of Instruction. The State Department of Education, in accord with the wishes of the State Board of Education, has power to adopt textbooks, authorize a state course of study, certify teachers, and establish standards by which schools qualify for state financial aid. It also supervises vocational and rehabilitational programs. Local school districts, which are taxing units, vary in size and are divided into three classes. Districts of the first class have a larger measure of local control over textbooks, curriculum, and teacher qualifications.

State and Local Revenue

Oregon levies income and property taxes, but no sales or poll taxes. A peculiar feature of the state's tax structure is a constitutional provision prohibiting a taxing agency from raising an amount of revenue greater than its tax base for purposes other than the payment of bonded indebtedness or the interest thereon. The tax base is the total amount lawfully levied in any of the preceding three years for purposes other than those cited plus six percent of that total amount. A higher tax base may, however, be established by a taxing unit with the approval of a majority of the voters. Of the $212,685,000 collected in state taxes in 1962, 22.6 percent came from gross receipts and special excises, 52.6 percent from income, 20.7 percent from licenses, and 4.1 percent from other sources. This total represents an increase of 91.4 percent over the receipts of 1953. Per-capita state tax collections for 1962 were $118.22, slightly above the national average of $112.86. Oregon's state tax collections in 1962 expressed as a percent of personal income were 5.3 percent. In 1961, Oregon ranked seventeenth with $221.46 per capita total tax collections of state and local governments, 4.3 percent above the national average. Direct general expenditures by state and local governments totaled $608 millions in 1960. Property tax collections were 96.5 percent of the total taxes collected locally in 1960, a lower proportion than in 14 other states.

Financial Support of Education

Educational funds from federal sources totaled $8,900,000 or 4.4 percent of the Oregon distribution for 1961-62. This sum was above the national average that year and ranked Oregon nineteenth in federal funds received for education.

Oregon has no state taxes earmarked for public schools. Thirty-one percent, or approximately $63,500,000 of the funds for schools in 1961-62 were collected at the state level through personal income and excise taxes. This proportion of state to local support of education is higher than in recent years. However, it was still 9.2 percent below the national average for that year. Of the $204,500,000 expended in 1961-62 on elementary and secondary education in Oregon, $132,100,000 was raised by local districts. True cash value of all taxable property in the state in January of 1962 was $10,629,520,000. This property was assessed at $2,869,965,000 or at a gross state ratio of 27 percent of true cash value. A levy of 14.4 mills on true cash value would have been necessary to collect the needed revenue. Only two of the nine western states have higher local property taxes for schools than does Oregon.

Public schools in Oregon have historically been financed through a local property tax. Prior to 1942 less than one percent of the educational funds came from the state level. In 1942 a measure was enacted to distribute to schools all the income tax monies in excess of $7 3/4 millions annually collected by the state. The legislature in 1943 limited to $5 millions per year the sum allotted to schools. The 1945 legislature increased this "property offset" fund from $5 to $8 millions and authorized a two-mill statewide elementary school property tax also to be offset by surplus income tax funds. This increased the state aid to $10 millions per year. In 1946 the Basic School Fund was initiated. It provided 50 percent of the operational cost of the schools in the state.

State financial aid to the public schools from the General Fund has grown from the initial $5 millions in 1943-44 to $65,454,360 in the 1962-63 school year. The goal of attaining 50 percent state support of the operational costs of the schools approached its highest point at 41.3 percent from state funds for the school year 1952-53. It is anticipated that for the 1962-63 school year, 35 percent of the operational cost will come from the Basic Fund. The Basic School Support Fund is divided among transportation aids, apportionment for growth, flat grants, and equalization. This appropriation is determined by multiplying the number of children in the state between the ages of 4 and 20 years (age specified in 1961 statute) by a specified amount. This amount was $115 per census child in 1961-62 and $120 in 1962-63.* To this there is added about one-half million dollars in reversions from several special accounts. Funds for administration, an emergency account, handicapped children, exceptionally advanced children, mentally retarded children, curriculum improvement, educationally able and gifted, school district reorganization, migrant children, and state institutions are subtracted. In 1961-62 these accounts totaled $3½ millions. From funds available for apportionment, transportation aids are first deducted. These aids are apportioned on the basis of two cents per pupil mile per day of membership for each pupil living one mile or more from school and for whom transportation (or board and room in lieu of transportation) was provided, or 60 percent of the net cost of transportation in the district, whichever is the lesser. Transportation aid, however, may not be less than 50 percent of net expenditures. After the apportionment is made for transportation, the balance is multiplied by 3.3 percent. This amount is then used for growth. The growth measure for each school district is the remainder computed by deducting from the weighted resident average daily membership (A. D. M.$_w$), as determined by adding to the average daily membership of pupils from grades 1 to 8 the average daily membership of pupils from grades 9 to 12 multiplied by 1.3, for the period ending December 31 of the apportionment year, the weighted average daily membership of resident pupils for the preceding year. The district receives the proportion of total monies available for growth as increase in A. D. M.$_w$ bears to total increase in

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*1963-65 biennium provided substantial increases. See Appendix C.

A. D. $M._w$ in all districts of the state, except that no district may receive an increase of more than \$90 per A. D. $M._w$. The balance reverts to the general apportionment account for the following year.

After the apportionments for transportation and for growth have been deducted, the remainder is used in the foundation program. The foundation program is divided into two parts: flat grants and equalization. The total amount available for flat grants is 80 percent of the total for the foundation program and is distributed among all the districts. To determine the amount of the flat grant per A. D. $M._w$ the fund is divided by the total A. D. $M._w$ of the state. The A. D. $M._w$ for the district is then multiplied by this amount. In 1961-62 the flat grant per A. D. $M._w$ was \$104.63.

The remaining 20 percent is distributed according to each district's ability to support a minimum foundation as determined by the state. The minimum foundation of a district is \$295.00 per A. D. $M._w$. There is also a small-school correction for those districts with less than 100 A. D. $M._w$ if the existence of the district is considered to be justified. To determine the local contribution correction in the formula, the sum of the receipts of the district from the following sources is calculated:

1. The county school funds (which include federal forest reserve fees and may include receipts from some other non-property tax sources)
2. The common school fund
3. Seventy-five percent of the receipts from Public Law 874.

From this sum is deducted the amount the district levies for the county school fund. The local contribution rate is then added. It is determined by the maximum millage rate on true cash value of taxable property within a district that must be levied locally to have, with the amount received from the state and the local contribution correction, the cost of a minimum foundation program. In 1961-62 the local contribution rate was 7.280686 mills.

Tennessee

Tennessee ranks thirty-fourth in size with an area of 42,244 square miles. It has six well-defined geographic divisions: Unaka Mountains, Great Valley of East Tennessee, Cumberland Plateau, Highland Rim of middle Tennessee, Central Basin, and Gulf Coastal Plain of western Tennessee.

Since the inception of the Tennessee Valley Authority in the 1930's, industrial activity has risen in the state's economy and agriculture has declined in relative importance. At present, only one-fourth of the gainfully-employed population is engaged in agriculture. Per-capita personal income in 1962 was \$1,702. Projections to 1970 show a gain of 1.4 percent over the 1961 figures. Low wage rates, concentration of industries which use a large amount of labor in comparison to capital investment, and low levels of capital formation are some of the reasons that have been advanced for this state's slow start in industrialization and delay in keeping pace with other areas of the nation.

Tennessee's population has grown considerably slower than that of the United States. In 1960, the urban population exceeded half the total (52.3 percent) for the first time. Twenty-five percent of the state's 3,567,089 residents live in the four largest cities. Foreign-born whites constituted 0.5 percent of the 1960 census, non-white 16.4 percent, and native-born whites the remainder. The population is expected to be 3,810,000 in 1970, an increase of 6.8 percent over the 1960 figure.

Development of Public Education

Before the Civil War, opportunities for elementary and secondary education were provided largely by private schools. A system of public or common schools, initiated in 1823, existed. However, it was highly decentralized and handicapped by the stigma of pauperism. In 1867, a law was enacted providing for a state system of white and Negro schools to be headed by a State Superintendent. This law was repealed in 1870, but reenacted in 1873 to become the parent law of the modern public school system. Among the more important modifications were the creation of a State Board of Education in 1875, provision for a secondary school system in 1891, and in 1909 the creation of a general education fund. School attendance is compulsory for ages 7 through 16. Enrollment in the public schools increased from 485,354 in 1900 to 866,500 in 1962-63.

With the adoption of a uniform school code in 1925, public school administration was vested in a State Commissioner of Education; a State Board of Education (consisting of the Commissioner, the Governor, and nine other members); and a superintendent and board in each city and county. The Commissioner and the other members of the State Board are appointed by the Governor. The County Superintendent is elected biennially by either the county court or by popular ballot. The State Board of Education prescribes the rules and regulations for the operation of the school program, and prescribes standards and requirements for curriculum, teacher certification, school buildings, grading, and instructional materials. It also maintains and controls the five state colleges and the Tennessee Agricultural and Industrial State University along with the Tennessee School for the Blind, the Deaf, and the Alvin C. York Agricultural Institute.

State and Local Revenue

Tennessee levies a general sales tax of three percent, a corporate income tax, and a personal income tax (on dividends and interest only because of constitutional limitations). In addition, there are special excises on motor fuels, tobacco, alcoholic beverages (legalized on a county option arrangement), and various privilege taxes. State tax collections amounted to $329,078,000 in 1962. This was an increase of 77.4 percent over the collection of 1953. Of the 1962 collection, 71.5 percent came from sales and gross receipts, 8.5 percent from income, 17.3 percent from licenses, and 2.8 percent from other sources. Per-capita state tax collections for 1962 were $91.03, well below the national average. Tennessee's state tax collection as a percent of personal income in 1962 was 5.3 percent. The total tax collection of state and local governments in 1961 was $136.27 per capita, which ranked the state fourty-sixth in the nation, 35.8 percent below the national average.

Direct general expenditures by state and local governments totaled $775.3 millions in 1960. The expenditure for education was 35.2 percent of this outlay. Highways, public welfare, and health and hospitals received 40.5 percent. Expenditure for education in 1961 was 34.4 percent of total state and local government expenditures. At the local level, property tax collections were 88.3 percent of total local taxes collected in 1960. Thirty-two states relied more heavily on property taxes as a local revenue source than did Tennessee that year. Education received 68 percent and highways 20.7 percent of the $154,489,000 subvented in 1960.

Financial Support of Education

Under existing legislation, revenues from two major taxes (tobacco and retail sales and use) are specifically earmarked, in whole or in part, for education. At present, the entire net revenues from tobacco are dedicated to education, while 86.2 percent of net sales and use tax revenue is earmarked for education. As a rule, earmarked taxes have fallen short of the total state appropriations for education. The difference is drawn from other general fund revenues. The state's 1962-63 appropriation for current operation and maintenance of its public schools was $103,802,600. Because earmarked taxes collected by the state play such a significant role in supporting public schools, state revenue is approximately sixty percent of the total. This is more than 20 percent above the national average. In 1962-63, local and intermediate (county) units of government contributed 40.9 percent, or $95,000,000 of the revenue receipts for public school support.[2] Taxes on local property accounted for 84.6 percent of this total. Federal aid to vocational education, school lunch programs, and grants to other federally-supported programs amounted to $13,060,000 in 1959-60. This was 6.9 percent of all revenue received for public schools and is characteristic of Tennessee's participation in programs of federal aid in recent years.

Tennessee's counties and cities vary greatly in the relation of wealth to school-age children, regardless of the indices used to measure wealth. Comparison of these two factors reveals the following:

1. The four largest counties have 50.4 percent of the wealth (based on the use of any of three different indices) and 39.4 percent of the school-age population.

2. The 21 next largest counties have 25.2 percent of the wealth and 27.8 percent of the children.

3. The remaining 70 counties have 24.4 percent of the wealth and 32.8 percent of the children.

The wealthiest county is 438 times as wealthy as the poorest--the range is from 0.042 percent to 18.395 percent of the state's wealth. When wealth is related to the numbers of school-age children, the range in wealth per pupil is about five to one, i.e., the wealthiest county has five times as much wealth per pupil as the poorest. The poorest county must levy a net effective tax rate five times as high as the richest county to produce the same number of dollars per pupil.

The backbone of the present Tennessee public school support plan is the minimum school program. The basic element is the equalizing plan, but school systems may elect to receive their aid under a flat-grant or non-equalizing plan.

Under the equalizing plan the educational needs of school systems are calculated uniformly. The need is then priced as follows:

1. Salaries for system-wide positions are determined in accordance with employment standards, salary schedules, and standards for the allowable number of such positions as established by the State Board of Education and approved by the State Commissioner of Education.

2. Salaries for teachers and principals are determined in accordance with a state salary schedule, which ranged in 1962-63 from $1,910 to $4,280 annually, depending upon the training and experience of the teacher.*

3. A salary allowance for clerical employees is determined in accordance with rules and regulations formulated by the State Board of Education and approved by the State Commissioner of Education.

4. An allowance, to county school systems only, for the costs of transportation is based upon the number of pupils transported and the density of population in the county.

5. An allowance for the travel expense of the county school superintendent and the county board of education equal to $500 annually is included, regardless of the size of the county.

6. An allowance of $2.00 per pupil in A. D. A. during the preceding year is included for instructional materials and health services.

7. An allowance of $9.75 per pupil in A. D. A. is provided for plant operation, maintenance, fixed charges, and general control.

For each school system under the equalizing plan the amounts listed above are added together to determine the cost of the minimum school program. The state contributes the difference between the total cost of its minimum program and its pro-rata share (based on A. D. A.) of the amount the local county is required to contribute as its share. The local share is the county's percentage of relative taxpaying ability multiplied by $18,120,000.

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*These amounts were increased $400 by action of the 1963 legislature.

An economic index is used to determine the estimated relative value of locally assessed property in each county. The index is based on motor vehicle registration payments, farm products sold, gainfully-employed non-governmental workers, and state retail sales tax collections. The index is used to calculate the estimated value of locally assessed property only. Public utilities are assessed by a state agency.

If any county, city, or special school district elects not to participate in state equalizing funds or any county, city, or special school district fails to comply with the requirements for participation in equalizing funds, it will receive non-equalizing funds for current operation and maintenance in an annual amount equal to the sum of the following:

1. Seventeen dollars per pupil in A. D. A., grades 1-12, during the preceding school year.
2. Five hundred dollars per teaching position actually maintained during the current school year, provided the number of teaching positions upon which the $500 allowance is made shall not exceed one teacher for every 25 pupils in A. D. A.
3. Five hundred dollars for each teacher of exceptional children actually allowed and used under rules and regulations prescribed by the State Board of Education and approved by the State Commissioner of Education.
4. Five hundred dollars for one position of superintendent per county, city, or special school district actually maintained during the current year and for which no other provision has been made.
5. Eight hundred dollars per position for additional supervising teachers and attendance teachers allowed and used under the rules and regulations prescribed by the State Board of Education and approved by the State Commissioner of Education.
6. The increases in salary to which teachers, principal-teachers, and superintendents are entitled under the present salary schedule over and above the salary schedule adopted by the State Board of Education for the school year 1948-49.
7. Salary supplements of school clerical employees or per-capita amounts for clerical services as may be allowed by the State Board of Education and approved by the State Commissioner of Education.
8. Eight dollars per pupil transported more than one and one-half miles to school, under rules and regulations established by the State Board of Education and approved by the State Commissioner of Education. (Transportation funds are paid to county school systems only).

During the 1962-63 school year, local tax effort in county school systems varied from slightly less than the local contribution to the minimum foundation program (a 'guarantee clause' in the law makes this possible) to more than three times the index requirement. The range of such local tax effort for city and special school district systems was from slightly less than the economic index requirement to more than four times the requirement. In dollar terms the average local contribution for current expenditures in city and special school district systems is more than three times the economic index requirement, while in county school systems, the average local contribution is slightly less than twice the economic index requirement.

Unique among state support programs is Tennessee's foundation program for capital outlay aid. The aid is computed from A. D. A. for the previous school year multiplied by a fixed amount per pupil. This amount has been $16.75 per pupil for the past few years.

In addition to the broad program of state support for current operation and capital outlay, Tennessee provides special aids to local school systems for (a) textbooks, (b) the excess costs of educating exceptional children, (c) substitutes for teachers who are absent because of illness, (d) the development of vocational education in public schools, and (e) supplements for teachers' salaries provided revenue from sales and tobacco taxes exceed budget estimates.

Wisconsin

This state ranks twenty-sixth in size with an area of 56,144 square miles. Manufacturing is now the state's chief economic activity. This industry is concentrated in cities located in the southeastern part of the state and in the Fox River Valley. In 1960, 34 percent of the labor force was in manufacturing, 18 percent in agriculture, 18 percent in wholesale and retail trade, 11 percent in services, 9 percent in transportation, 9 percent in government, and 1 percent in mining. Per-capita personal income in 1962 was $2,283.

During the period 1950 to 1960 Wisconsin was in a declining economic position as compared with the nation as a whole; Wisconsin's per-capita personal income was 98.4 percent of the national average in 1950 and 97.7 percent in 1960. By 1970 it is anticipated that the per-capita personal income of Wisconsin will be 98.9 percent of the national average. The development of the St. Lawrence Seaway giving the Great Lake states access to all parts of the world is responsible in part for Wisconsin's improved economic position. This should continue to be an important economic factor in the future.

Wisconsin's population increased 15 percent from 1950 to 1960. Sixty-two percent of Wisconsin's 3,951,777 people resided in urban areas in 1960, compared with 56 percent in 1950. Ninety-two percent of the population is native-born white, 6 percent are foreign-born white, and 2 percent are non-white. Wisconsin can expect 4,624,000 residents in 1970, an increase of 17 percent. This is slightly below the projected national increase of 19.1 percent.

Development of Public Education

Through the efforts of a local newspaperman, Michael Frank, Wisconsin's first public elementary school was founded in 1845 at Kenosha. A free public school system was established in 1848 and provisions for free high schools were made in 1875. Margarethe Schurz opened the first kindergarten in the U. S. in 1856 at Watertown. Compulsory attendance for all children between ages of 7 and 14 was enacted in 1881. In 1911, a system of part-time vocational education for youths and adults was established. Since the upper age limit on compulsory attendance has been raised to 16, youths between that age and 18 not regularly enrolled in school or in an authorized apprentice program must attend a vocational school part time, if such school is located in their district.

During the 1930's, Wisconsin had almost eight thousand school districts. By July 15, 1963, consolidation had reduced the number to less than eight hundred. The enrollment in Wisconsin's elementary schools in 1900 was 427,639 and in high schools 15,901. In 1962-63, the elementary schools had 536,518 pupils and the high schools 231,820. Enrollment in all nonpublic schools in 1962 totaled 203,388.

The public school system is under the supervision of the State Department of Public Instruction, directed by an elected Superintendent of Public Instruction. It's direction of public education is exercised mainly through supervision, the distribution of state aids, teacher certification, and the enforcement of health and safety. The Department supervises the education and training of the physically and mentally handicapped, including those at state schools for the blind and deaf. The 23 county teachers' colleges are also under the jurisdiction of the State Superintendent. The office of county superintendent was created in 1861 and now serves many smaller school districts in a supervisory capacity. In a number of instances, one county superintendent in charge of an area composed of several counties.

State and Local Revenue

Historically, the chief source of local and state revenue in Wisconsin has come from taxes levied on property and income. The success of the Wisconsin income tax law of 1911 started a new movement in state taxation. In 1962, a selective sales tax was enacted. Additional state revenue is obtained from excises, motor vehicles, gasoline, amusements, tobacco, and liquor. State tax collections amounted to $459,680,000 in 1962 or $114.29 per capita. This was an increase of 81.8 percent over the 1953 figure. Of the 1962 tax collection, 33.5 percent came from gross receipts and special excises, 43.1 percent came from income, 12.2 percent from licenses, and 11.2 percent from other sources. As percent of personal income, tax collections were 5 percent in 1962. Per-capita total tax collections were $230.16 in 1961. The proportion going to education was 34.8 percent of all expenditures.

Financial Support of Education

Several taxes are earmarked by statute for the support of education. They include the first $9,750,000 of state income tax receipts, about forty percent of the forest crop tax, 8.7 percent of the tax on public utilities, and a highway privilege tax paid to the city of Milwaukee. In 1961-62, earmarked taxes amounted to $12,078,641, or 14.3 percent of the funds granted to intermediate and local school units. The balance of the $98,798,751 needed from state sources to support education in 1961-62 came from the permanent school endowment fund and legislative appropriations. The percent of revenue for public elementary and secondary schools received from the state is about twenty-two percent. Estimates for the school year 1962-63 indicate that the state's share will increase slightly to 23.9 percent, still considerably below the national average. The basic local tax in Wisconsin is the property tax. Local school districts and intermediate units rely exclusively on it as a source of revenue. In 1961-62, local and intermediate unit revenue receipts were $231,739,994; this was approximately seventy-three percent of all monies collected to support educational costs in the state. Wisconsin received $10,589,480 in federal aid in 1961-62, or slightly less than three percent of the total revenue collected for public elementary and secondary schools.

Wisconsin has provided state aid to education since the adoption of its constitution in 1848. Aids originally were provided for elementary schools only, but in 1875 high school aids were begun. Early state support funds, raised through the sale of public lands, were distributed as matching aids based on the school census. Later, the first earmarked tax for education, a one-mill levy on all property, was enacted. This law was repealed in 1931 and since that time school aids have been appropriated from the general fund, using specified sources for part of the revenue. The principle of equalization was established in 1927 by the "Callahan" Law. This law gave recognition to the fact that a minimum operating cost existed regardless of the number of children or the valuation of property within the school district and it provided state support based on the number of teachers employed.

A new plan adopted in 1949 serves as the framework for the present support program. It includes:

1. Recognition of quality of education by providing aid on an incentive basis

2. Equalization aids to both elementary and high schools

3. A substantial increase in state financial aid to schools

4. Some realization of the sharing of financial burden in providing schools

5. Encouragement of district reorganization through the adoption of the aid program.

To qualify for state aids, school districts must place a minimum levy upon the equalized valuation of property in the school district. Elementary and union high school districts must levy three mills. In school districts offering all grades the minimum levy is five mills. School districts are classified as basic or integrated districts. Those districts qualifying for aid on an integrated level must provide certain educational offerings and services. These requirements are set forth in the state statutes. State support for elementary and high schools may be paid either as flat or equalizing aids. Flat aids are paid per pupil in A. D. M. The two factors which determine equalization aid of a school district are equalized valuation and the number of resident children in A. D. M.

The Wisconsin formula operates in six aid classifications. Variations in flat aid and guaranteed valuation take into account the type of organization, variations in costs of education, and the incentive feature. The guaranteed valuations for the various aid classifications are shown in Table 6.1.

TABLE 6.1

GUARANTEED VALUATION SCHEDULE
STATE OF WISCONSIN, 1961-63

Classification of District	Guaranteed Valuation per Resident Pupil in Average Daily Membership 1961 - 63 Biennium
1. Basic 1 - 8	$24,500
2. Basic 9 - 12	55,000
3. Basic Kindergarten or 1 - 12	24,500
4. Integrated 1 - 8	28,000
5. Integrated 9 - 12	70,000
6. Integrated Kindergarten or 1 - 12	33,000

In districts qualifying for equalization aids, the current operating costs (operation, maintenance, administration, instruction, fixed charges, auxiliary services, and transportation) are totaled and reduced by the sum of the receipts of the district exclusive of state aid but including county aids, federal aids, transportation receipts other than state aids for transportation, and any non-resident high school flat aids. The result is the net operating cost of the district which, when divided by the guaranteed valuation, produces a required operating rate in mills. An operating levy rate is also determined by dividing the tax levy of the district by the equalized valuation of the district. The lesser of these two rates is multiplied by the difference between the guaranteed valuation and the equalized valuation to produce the equalization aid. In the event the rate exceeds 15 mills in integrated (K-12) districts, 20 mills in basic districts (K-8 or 1-8), or 25 mills in basic districts (K-12 or 9-12), the district qualifies for excess cost aid. Such districts, plus those receiving 50 percent or more of their budgets in state aid, must submit their budgets to the state superintendent of public instruction for approval. In effect, the state pays the total operating cost beyond the maximum levy under the excess aid provision.

Special grants in Wisconsin are allocated for pupil transportation and transportation equalization, education of handicapped children, vocational and adult education, library books, driver education, and tuition. Transportation funds are distributed on the basis of $24 per year for pupils residing two to five miles from school and $36 for pupils transported over five miles. All districts must transport pupils living two or more miles from school. Aids are distributed for visually, auditorially, mentally, speech, and physically handicapped. Reimbursement is made for teachers' salaries, transportation of such pupils, and special books and equipment; the state pays about seventy percent of the costs. Orthopedic school aids also are paid at about the seventy percent rate, with the state paying full costs of physical therapy. The state pays one-half the cost of homebound instruction, not to exceed $200 per pupil per year. Driver education aid is paid at the rate of $25 per high school pupil successfully completing an accredited driver education course. The common school fund is apportioned on the basis of school census with about half allocated to the purchase of library books. The tuition fund is used to pay tuition costs of pupils residing in children's homes, foster homes, and of parents at or residing on state or federal military camps or veteran's hospitals.

Selected data presented in this section are summarized in Table 6.2. Shown are income, revenue, and expenditure data for the U. S. and each of the four states.

Rotating the State Support Programs Among the 24 School Districts

The state support program of each state was applied to the districts of the other three states to assess impact on classes of district. As noted in the preceding section, each state distributes funds among local school districts by varying methods, therefore, it was necessary to obtain additional data. The processes devised to permit application of each state formula and comparisons of the results are presented below.

Applying the New Jersey Program

In applying the New Jersey formula to the districts of Oregon, Tennessee, and Wisconsin, it was necessary to determine the sources and amounts of shared taxes received by municipalities in these school districts. Since the tax-sharing levels vary among the states, they were equated to the New Jersey level before applying the 25 percent formula, in order to determine the total taxes shared in the state and the total equalized valuation of property in the state. In New Jersey in 1961 these shared taxes amounted to $85,261,000 paid to all municipalities. At the time, the total state equalized valuation was $29,712,695,000.[3] Since Oregon has no shared taxes, none could be considered in calculations for its schools. Tennessee shares the income tax with county and local governments, the alcoholic beverage tax with counties, the sales taxes with local governments, and the beer tax and motor fuel tax with both counties and local governments. These account for a total of $47,472,966. The total state equalized valuation is $9,430,419,000.[4] Wisconsin shares the personal and corporate income tax, the utility tax, and the liquor tax for a total of $97,949,482. The equalized valuation of the state is $18,844,251,120.

TABLE 6.2

SUMMARY OF SELECTED DATA RELATED TO INCOME, REVENUE, AND EXPENDITURE IN FOUR STATES AND THE UNITED STATES

	United States	Oregon	Tennessee	New Jersey	Wisconsin
Per-Capita Personal Income (1962)	$2,366	$2,229	$1,702	$2,887	$2,283
Major Tax Source		Income & Property	Sales, Corporate & Personal Income, Property	Selective Sales, Property, Parimutuels	Property, Selective Sales, Income
Per-Capita State Tax Collections (1962)	112.86	118.22	91.03	69.07	114.29
State Tax Collections as Percent of Personal Income (1962)	4.8%	5.3%	5.3%	2.4%	5.0%
Per-Capita Total Tax Collection (1961)	212.31	221.46	136.27	226.14	230.16
Expenditure for Education as Percent of All State Expenditures (1961)	36.6%	40.1%	34.4%	36.2%	34.8%
Percent of School Expenditures from State Sources	39.4%	30.0%	55.0%	23.0%	24.0%
Percent of School Expenditures from Federal Sources	3.6%	4.0%	7.0%	2.0%	3.0%
Personal Income per School-Age Child (1961)	9,174	8,914	6,262	11,872	8,732
Direct Expenditures of State and Local Government for all Levels of Education as Percent of Personal Income	5.0%	6.4%	4.8%	3.7%	5.3%

The ratios of shared taxes to equalized valuation are: New Jersey .00268; Tennessee .00503; and Wisconsin .00519. Tennessee and Wisconsin ratios were reduced to that of New Jersey by multiplying the shared taxes of Tennessee districts by .53280 and Wisconsin districts by .51637. Of the shared taxes calculated for each district, 25 percent was takne as the local fair share calculation.

Applying the Oregon Program

To calculate aids under the Oregon program for districts outside Oregon, it was necessary to approximate non-property tax receipts, common school fund receipts, and Public Law 874 receipts for each district. The transportation or growth factor was considered to be in the category of special grants. To determine the total funds available, the school-age census (New Jersey, 1,567,165; Tennessee, 1,777,110; and Wisconsin 1,128,041) was multipled by $120. Of this total, 71.934 percent would be available for flat grants per pupil unit (New Jersey, $159.95; Tennessee, $117.39; and Wisconsin, $133.13). The variations stem from differing proportions of public school enrollment to school census. When applied to the A. D. M.$_w$ of each of the districts, the rates determine the apportionments. To calculate the equalization in the Oregon formula, the A. D. M.$_w$ of the district was multipled by $295. The sum of the local contribution correction for that district plus the amount that a levy of 7.280686 mills on equalized valuation or true cash value of property would yield were subtracted. When the balance was larger than flat grant receipts, the difference was paid from equalization funds. No district received less than the flat grant funds.

Applying the Tennessee Program

To calculate the aids each district would receive from the Tennessee formula, the experience and training of each teacher in each district was ascertained, as well as the state salary schedule allowance[5] and resident A. D. A. The total cost of the minimum foundation program was then calculated. To set the local share, the percentage the county equalized valuation is of total equalized valuation of the state, and district A. D. A. is of county A. D. A. were calculated. The $18,120,000 local share in Tennessee is .00192 of the state equalized valuation. Using this figure, $57,048,374 would be needed in New Jersey, $23,294,876 in Oregon, and $36,180,962 in Wisconsin.

Applying the Wisconsin Program

To calculate aids under the Wisconsin program for all districts included in this phase of the study, receipts and costs fro 1962-63 were used as reported in the district budgets. Average daily membership for 1962-63, equalized valuations for 1961, and the 1962 levy were used.

Comparing the State Support Programs

Having calculated aids from the four state formulas for each of the 24 districts, the actual dollar amounts which would be received are compared. These amounts are shown in Table 6.3. However, the levels of aid

TABLE 6.3

TOTAL DOLLARS OF GENERAL PURPOSE AIDS TO 24 SCHOOL DISTRICTS UNDER FOUR SUPPORT PROGRAMS

School District	State Formula			
	New Jersey	Oregon	Tennessee	Wisconsin
1 - 1	$ 5,191,300.00	$14,976,872.05	$13,054,377.11	$ 4,528,831.00
1 - 2	435,200.00	1,256,614.07	1,128,497.22	380,010.00
1 - 3	245,889.00	510,854.51	445,501.98	358,409.00
1 - 4	150,750.00	440,646.99	362,537.27	133,379.00
1 - 5	130,150.00	385,437.98	308,000.04	175,144.00
1 - 6	223,524.00	406,449.43	305,387.97	261,757.00
2 - 1	4,234,561.00	11,048,354.31	9,287,976.51	8,024,480.00
2 - 2	780,400.00	2,711,856.28	2,016,622.69	968,750.00
2 - 3	131,750.00	430,729.36	678,790.84	155,374.00
2 - 4	422,377.00	1,337,533.89	1,291,978.84	337,162.00
2 - 5	561,975.00	906,519.89	596,979.38	939,813.49
2 - 6	97,181.00	215,660.59	385,559.64	196,715.19
3 - 1	3,962,286.00	8,783,879.16	7,109,878.43	3,268,975.00
3 - 2	1,418,017.00	2,293,384.15	2,124,729.84	1,790,627.30
3 - 3	127,851.00	218,501.85	373,874.84	173,008.97
3 - 4	388,306.00	608,924.84	575,455.95	681,249.55
3 - 5	438,993.00	755,709.74	478,500.88	822,951.32
3 - 6	243,790.00	390,114.53	281,056.82	384,882.71
4 - 1	11,654,699.00	20,674,363.91	12,232,351.92	10,274,068.68
4 - 2	794,458.00	1,379,583.17	950,092.47	948,355.42
4 - 3	509,628.00	873,197.99	500,423.93	395,932.21
4 - 4	86,450.00	225,083.59	250,878.89	77,324.00
4 - 5	3,796,913.00	6,610,146.54	3,820,456.87	4,033,257.05
4 - 6	268,689.00	474,717.04	274,854.64	172,866.53

School District Code:

1st digit: 1 - Wisconsin, 2 - New Jersey, 3 - Oregon, 4 - Tennessee

2nd digit: 1 - Large City, 2 - Medium City, 3 - Small City, 4 - Established Suburb, 5 - Developing Suburb, 6 - Agricultural Service Center

TABLE 6.4

TOTAL DOLLARS OF GENERAL PURPOSE ADJUSTED STATE AIDS TO 24 SCHOOL DISTRICTS UNDER FOUR SUPPORT PROGRAMS

School District	State Formula			
	New Jersey	Oregon	Tennessee	Wisconsin
1 - 1	$ 8,649,427.68	$10,225,144.94	$11,629,631.01	$ 5,573,465.67
1 - 2	725,103.71	857,926.87	1,005,333.77	467,664.32
1 - 3	409,685.26	348,775.19	396,880.18	441,080.76
1 - 4	251,170.46	300,842.48	322,970.19	164,144.62
1 - 5	216,847.99	263,149.68	274,385.11	215,543.27
1 - 6	372,422.06	277,494.81	272,058.12	322,134.70
2 - 1	7,055,367.46	7,543,031.93	8,274,292.88	10,463,689.28
2 - 2	1,300,254.91	1,851,462.93	1,796,529.82	1,192,204.97
2 - 3	219,513.82	294,071.42	604,707.52	191,213.06
2 - 4	703,738.81	913,173.18	1,150,972.98	414,932.79
2 - 5	936,328.49	618,907.42	531,825.44	1,156,593.88
2 - 6	161,917.05	147,237.73	343,479.91	242,090.14
3 - 1	6,601,719.45	5,997,009.07	6,333,910.99	4,023,007.24
3 - 2	2,362,613.50	1,565,759.87	1,892,837.91	2,203,659.13
3 - 3	213,017.54	149,177.55	333,070.38	212,915.77
3 - 4	646,971.79	415,730.64	512,651.06	838,388.75
3 - 5	731,423.38	515,944.95	426,277.60	1,012,775.90
3 - 6	406,188.04	266,342.50	250,382.46	473,660.98
4 - 1	19,418,349.18	14,114,987.88	10,897,321.11	12,643,918.28
4 - 2	1,328,677.50	941,881.44	846,400.00	1,167,106.12
4 - 3	849,111.11	596,157.59	445,807.99	486,594.64
4 - 4	144,037.72	153,671.09	223,498.13	95,159.80
4 - 5	6,326,185.04	4,512,938.76	3,403,494.73	4,963,581.04
4 - 6	447,673.23	324,103.09	244,857.18	212,740.47

School District Code: See Table 6.3

per pupil vary considerably. The state budgets show anticipated expenditures in 1962-63 for general aids to schools of $156,063,030[6] in New Jersey, $65,454,360[7] in Oregon, $102,205,000[8] in Tennessee, and $64,635,000[9] in Wisconsin. Total enrollments in these states for the same year are 1,175,000 in New Jersey, 424,742 in Oregon, 866,500 in Tennessee, and 757,000 in Wisconsin.[10] Thus, the average aid paid per pupil was $63.07 in New Jersey, $153.91 in Oregon, $117.95 in Tennessee, and $85.38 in Wisconsin. The average payment for each pupil in the four states is $105.08. As a proportion of the average, the aid per pupil is .60019 in New Jersey, 1.46471 in Oregon, 1.12251 in Tennessee, and .81257 in Wisconsin. By using these proportions as an index applied to the actual amounts to reduce the aid to a common level, the effect of each state formula on each district is shown more clearly. This comparison is given in Table 6.4.

The effort in these school districts varies widely as was found in calculating the required operating rate for the Wisconsin formula and as may be seen from per-pupil expenditures in Table 6.5. Costs expressed are for current operation exclusive of transportation, community service, capital outlay, and debt service in each district. A. D. M. expressed is taken from the total number of resident and non-resident pupils in the school district. We can see that the costs per pupil in A. D. M. for current operation range from $182.26 in one district to $664.51 in another.

Two of the four state formulas reward districts for effort. These are Tennessee and Wisconsin. The reward for effort in Tennessee is in the form of a greater allotment for training and experience of teachers. In Wisconsin the reward is in direct proportion to costs of current operation as related to district wealth measured by equalized and guaranteed valuations. It is difficult to predict the changes in effort which would result from increases in experience and training of teachers with accompanying increases in allotments. However, changes in effort under the Wisconsin formula can be readily determined by readjusting the required operating levy rate. This was done for those districts with an average per-pupil expenditure below $330, the amount that would be raised by a 10-mill levy on the guaranteed valuation. The changes in the aids the districts would receive if this readjustment is made are shown in Table 6.6 with the indices in Table 6.4 applied. Table 6.7 gives the equalized valuation per pupil in A. D. M. in

TABLE 6.6

WISCONSIN SUPPORT FORMULA APPLIED TO DISTRICTS LEVYING
LESS THAN 10 MILLS AND THE EFFECT OF ADJUSTING TO A 10-MILL EFFORT
IN SIX SELECTED DISTRICTS IN TWO STATES

City	Present Effort	10-Mill Effort	10-Mill Effort (Index Applied)
1 - 6	$ 261,757.00	$ 319,604.97	$ 393,326.07
4 - 1	10,274,068.68	17,325,579.56	21,321,953.25
4 - 2	948,355.42	1,222,107.50	1,504,002.73
4 - 3	395,932.21	809,677.32	996,440.08
4 - 5	4,033,257.05	5,862,292.23	7,214,507.34
4 - 6	172,866.53	430,016.24	529,205.16

City Code: See Table 6.3

TABLE 6.5

TOTAL PER-PUPIL EXPENDITURE FOR CURRENT OPERATION IN 24 SCHOOL DISTRICTS, 1962-63

School District	Total Expended for Current Operation	Resident & Non-Resident A. D. M.	Total Expended Per Pupil in A. D. M.
1 - 1	$49,612,575.00	103,826	$477.84
1 - 2	3,732,826.75	8,704	428.86
1 - 3	1,127,993.00	2,797	403.29
1 - 4	1,346,031.90	3,015	446.45
1 - 5	1,032,721.00	2,603	396.74
1 - 6	711,075.00	2,202	322.92
2 - 1	32,655,766.00	65,322	499.92
2 - 2	7,437,903.68	15,608	476.54
2 - 3	2,227,452.00	3,352	664.51
2 - 4	4,165,305.00	7,560	550.97
2 - 5	1,550,769.00	4,440	349.27
2 - 6	1,164,450.00	2,170	536.61
3 - 1	35,403,547.00	74,174	477.30
3 - 2	7,406,546.00	17,817	415.70
3 - 3	1,078,406.00	2,033	530.45
3 - 4	1,660,456.53	3,755	442.20
3 - 5	2,143,651.00	4,350	492.79
3 - 6	897,954.80	2,345	382.92
4 - 1	25,446,415.00	110,464	230.36
4 - 2	1,679,508.05	6,492	258.70
4 - 3	781,097.55	3,573	218.61
4 - 4	473,225.00	1,729	273.70
4 - 5	7,888,446.00	33,870	232.90
4 - 6	420,115.86	2,305	182.26

School District Code: See Table 6.3

TABLE 6.7

PER-PUPIL ADJUSTED STATE AIDS IN 24 SCHOOL DISTRICTS UNDER FOUR SUPPORT PROGRAMS

School District	Equalized Value/A. D. M.	State Formula			
		New Jersey	Oregon	Tennessee	Wisconsin
1 - 1	$37,120.14	$ 83.31	$ 98.48	$112.01	$ 53.68
1 - 2	32,748.71	83.30	98.57	115.50	53.73
1 - 3	19,924.43	146.47	124.70	141.89	157.70
1 - 4	44,511.31	83.30	99.78	107.12	54.44
1 - 5	27,690.17	83.31	101.09	105.41	82.81
1 - 6	18,485.70	169.13	126.02	123.55	146.29 (178.62)
2 - 1	24,041.80	108.01	115.47	126.67	160.19
2 - 2	28,613.60	83.31	118.62	115.10	76.38
2 - 3	41,262.73	83.31	119.20	245.12	77.51
2 - 4	34,890.79	93.09	120.79	152.25	54.88
2 - 5	13,687.07	210.88	139.39	119.78	260.78
2 - 6	23,102.90	129.95	116.46	271.53	194.29
3 - 1	29,011.55	89.69	81.47	86.05	54.65
3 - 2	24,082.43	132.60	87.88	106.24	123.68
3 - 3	23,507.07	116.15	81.34	181.61	116.09
3 - 4	19,317.90	172.30	110.71	136.53	223.27
3 - 5	19,816.43	168.14	118.61	97.99	232.82
3 - 6	19,207.65	173.21	113.58	106.77	201.99
4 - 1	17,315.63	175.79	127.78	98.65	114.46 (193.02)
4 - 2	16,341.63	203.89	145.08	130.38	179.78 (231.67)
4 - 3	10,329.77	237.65	166.15	124.77	136.19 (278.88)
4 - 4	65,690.94	83.31	89.88	129.26	55.04
4 - 5	15,691.79	186.78	133.24	100.49	146.55 (213.01)
4 - 6	14,344.20	194.22	140.61	106.23	92.30 (229.59)

School District Code: See Table 6.3
Figures in parentheses would be received at a 10-mill required operating levy rate.

each of the 24 districts and the aid per pupil in A. D. M. under each formula when the indices were applied. Figures in parentheses under the Wisconsin formula are the amounts per pupil that would be received at a 10-mill required operating levy rate.

Analysis of Receipts

An analysis was made of the amounts received by each district under each formula. To minimize differences in gross amounts, "dollars per pupil enrolled" (D. P. E.) were used. The mean D. P. E. calculated to be received by the 24 districts when the New Jersey formula is used is $82.26; the range is $92.26. The standard deviation is $29.43 with a coefficient of variation of 2.796. Using the Oregon formula, mean D. P. E. is $167.92, range is $125.25, standard deviation is $30.87, and coefficient of variation 5.439. Under the Tennessee formula, mean D. P. E. is $146.90, range $208.20, standard deviation $48.69, and coefficient of variation 3.017. Applying the Wisconsin formula, mean D. P. E. is $103.15, range $168.05, standard deviation $50.80, and coefficient of variation 2.031. These measures were also obtained for each class of district. The results are given in Table 6.8.

TABLE 6.8

COMPARISONS OF D. P. E. BY CLASS OF DISTRICT

Measure	Type of District Large City	Medium City	Small City	Established Suburb	Developing Suburb	Ag. Service Center
Mean	$105.40	$115.88	$140.99	$110.37	$142.99	$150.39
Range	$143.54	$168.85	$225.15	$137.18	$161.67	$229.79
Standard Deviation	23.26	29.57	16.04	29.94	32.35	17.60
Coefficient of Variation	4.53	3.92	8.79	3.69	4.42	8.54

An analysis of variance yields an F ratio of 20.959. At three and twenty degrees of freedom, the .01 level of significance is 4.01 and the .05 level of significance is 2.71. It may be concluded that at the one percent level of significance variance in treatment under each of the four state formulas is significant. This variance may be due to differing levels of support in the four states or to real differences in the effects of the formulas.

Eliminating the effects of differing state levels of support (see pages 207 and 210) and then applying an analysis of variance produces an F ratio of .871. The four state formulas are not, therefore, producing significant variance in their application. Much of the variance is the result of differences in level of support among the four states.

However, when the D. P. E. measures are grouped by class and analyzed (with the index applied), there is significant variance in the level of support that would be received under the four formulas. The F ratio was found to be 2.927 and the .05 level of significance = 2.315.

There are several explanations for variance among classes of district that may have implications for the development of a state support model. One is the possibility that some formulas favor kind or size of community. There is also the likelihood that some differences among classes of district reflect the need for varying levels of state support. Although support plans may have been measuring and rewarding these differences among classes of district imperfectly, they nevertheless have distinguished among districts to some degree. This would suggest that a state support model must recognize differences in class of district. Thus, it becomes essential to discover and recognize those characteristics of districts which generate differences, in order that uniqueness may be properly accommodated.

Relationship of the Impact of Support to the Purposes of Support

Three purposes of grants-in-aid having considerable historical precedent are equalization among districts, relief from local taxes, and stimulation of local expenditure. Upon examination of results of the application of the four state formulas, it can be reasonably concluded that each formula accomplishes equalization. However, the degree of equalization varies considerably among formulas.

The New Jersey formula rewards the poorer districts much more than the wealthy, thereby accomplishing positive equalization. The Oregon formula rewards the poorer districts more than the wealthy but not to the same extent. It distributes a higher proportion of state funds in flat grants. The Tennessee formula, while equalizing to the extent that "tax sharing" is equalization, actually seems to counteract equalization. In some cases wealthier districts receive more per pupil than do poorer districts. This is seen to an extent in Tennessee and in New Jersey where the richest district receives the most aid per pupil.

When it comes to providing relief from local taxes, each formula accomplishes this purpose since every district receives some aid. In total dollars received as related to pupil costs, there was found to be variation as seen by comparing Table 6.9 with Table 6.5. The extent of local tax relief was highest under the Oregon program and next highest under the Tennessee program. In flat aid or flat grant districts, New Jersey's program ranked next to Tennessee and higher than Wisconsin. Conversely, tax relief in the equalization districts was greater under the Wisconsin program than under the New Jersey program.

With regard to stimulation of local expenditures, the New Jersey and Oregon formulas accomplish this only slightly if at all. The Tennessee formula stimulates local expenditures by rewarding districts having staffs with greater experience and training. However, the local effort needed in Tennessee to accomplish this may be too great in relation to the rewards

TABLE 6.9

ACTUAL DOLLARS OF AID PER A. D. M. IN 24 SCHOOL DISTRICTS UNDER FOUR SUPPORT PROGRAMS

School District	State Formula			
	New Jersey	Oregon	Tennessee	Wisconsin
1 - 1	$ 50.00	$144.25	$125.73	$ 43.62
1 - 2	50.00	144.37	129.65	43.66
1 - 3	87.92	182.64	159.28	128.14
1 - 4	50.00	146.15	120.24	44.24
1 - 5	50.00	148.07	118.33	67.29
1 - 6	101.51	184.58	138.69	118.87
2 - 1	64.83	169.14	142.19	130.16
2 - 2	50.00	173.75	129.20	62.07
2 - 3	50.00	174.60	275.15	62.98
2 - 4	55.87	176.92	170.90	44.60
2 - 5	126.57	204.17	134.47	211.67
2 - 6	76.82	170.48	304.79	155.51
3 - 1	53.83	119.33	96.59	44.41
3 - 2	79.59	128.72	119.25	100.50
3 - 3	69.71	119.14	203.86	94.33
3 - 4	103.41	162.16	153.25	181.42
3 - 5	100.92	139.98	110.00	189.18
3 - 6	103.96	166.36	119.85	164.13
4 - 1	105.51	187.16	110.74	93.01
4 - 2	122.37	212.51	146.35	146.08
4 - 3	142.63	244.39	140.06	110.81
4 - 4	50.00	130.18	145.10	44.72
4 - 5	112.10	195.16	112.80	119.08
4 - 6	116.57	205.95	119.24	75.00

School District Code: See Table 6.3

gained. The Wisconsin formula stimulates local expenditures by rewarding, in direct proportion to their efforts, the districts that qualify for equalization aids.

Which of these grants are fixed and which are variable? If fixed grants are independent of local expenditures, the New Jersey and Oregon formulas must be considered fixed grants. If variable grants are tied to local expenditures, the Tennessee and Wisconsin formulas must be considered variable grants.

Notes to Chapter VI

1. Primary sources used in documenting statistics throughout this section of the chapter are listed below.

   a. U. S. Department of Health, Education, and Welfare, Public School Finance Programs of the United States, 1957-58, No. 33.

   b. U. S. Department of Health, Education, and Welfare, Revenue Programs for the Public Schools of the United States, 1959-60, No. 38.

   c. U. S. Department of Health, Education, and Welfare, Statistics of State School Systems, 1959-60, Circular No. 691.

   d. National Education Association, Research Division, Estimates of School Statistics, 1962-63, Report 1962 - R13.

   e. National Education Association, Research Division, Ranking of the States, 1963, Report 1963 - R1.

   f. N. E. A. Committee on Educational Finance, State Taxes in 1962 (February, 1963), CEF Report No. 7.

   g. National Education Association, Financing the Public Schools, 1960-1970, Special Project on School Finance (1962).

   h. U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States (1962).

   i. ________, Encyclopedia Americana.

   j. ________, Encyclopedia Brittanica.

   k. U. S. Department of Commerce, Bureau of the Census, U. S. Census of Population, 1950.

   l. U. S. Department of Commerce, Bureau of the Census, U. S. Census of Population, 1960.

   m. The population figures for 1970 are unofficial figures prepared by the Bureau of the Census at the request and expense of the National Education Association.

   n. Projections of the national economy 10 years hence by the National Planning Associations.

   o. U. S. Department of Commerce, Bureau of the Census, Compendium of State Government Finances in 1960 (U. S. Government Printing Office, 1961), G-SF60-No. 2.

   p. U. S. Department of Commerce, Bureau of the Census, Governmental Finances in 1960 (U. S. Government Printing Office, 1961), G-GF60 No. 2.

q. U. S. Department of Commerce, Office of Business Economics, Survey of Current Business (July and August, 1961).

r. State of Oregon, "Apportionment of the Basic School Support Fund for the Fiscal Year Ending June 30, 1962."

s. State of Tennessee, "Tennessee's State Support Program, 1962-63."

t. State of Wisconsin, "Distribution of Wisconsin Public School State Aid Dollars for 1961-62."

u. State of New Jersey, "Current Expense State Aid."

2. Includes funds of city and county governments for debt service for school buildings amounting to $19,000,000.

3. State of New Jersey, Tenth Report of the Commission on State Tax Policy (Trenton, 1963), p. 133.

4. State of Tennessee, The Budget Document, 1963-65.

5. Tennessee State Department of Education, 1962-63 Tennessee State Salary Schedule Guide, (mimeographed).

6. State of New Jersey, Budget Message of Richard J. Hughes, Governor of New Jersey, for the Fiscal Year Ending June 30, 1964.

7. State of Oregon, Biennial Budget Report, 1963-65.

8. State of Tennessee, The Budget Document, 1963-65.

9. State of Wisconsin, Wisconsin State Budget, General Fund 1963-65.

10. National Education Association, Research Division, Ranking of the States, 1962 (Washington D. C., 1963).

CHAPTER VII

OPERATIONAL DIFFERENCES AMONG STATES AND CLASSES OF SCHOOL DISTRICT

Examination and analysis in Phase I of this study of variables and factors related to fiscal capacity and educational and municipal service responsibilities, led the investigators to conclude that differences exist among classes of district. Acceptance of the postulate that such differences are to be recognized and accommodated in a state support model dictates the identification of measurable differences at the operational level. Factor and discriminant analyses provided evidence that significant variations exist among classes of district but did not indicate what are the differences or how they might be identified and measured. It is the purpose of this chapter to analyze detailed data of 24 districts in four states to determine differences which exist among classes of district and among states.

Considerable data were gathered and compiled by the 24 cooperating school systems utilizing forms devised by the project staff. Data describing relationship of the support of municipal and educational services, educational expenditures as reflected by budgetary analysis, and general operation of the educational enterprise were studied and are reported in the following sections. To understand better the data, a brief description of the methods of analysis and some limitations of the data are presented.

Analysis and Limitations of Data

In analyzing the data, answers to the following basic questions were sought:

1. What relationship exists between the support of education and the support of municipal services?

2. What are the distinguishable differences among classes of district at the operational level?

Techniques Used

Analysis included comparison intended to identify differences and similarities among classes of district and states. When appropriate, the Friedman two-way analysis of variance by ranks was employed in testing statistical significance of differences. This technique was employed because there was some question as to whether the districts were drawn from the same population.[1] In this method the data are ordered in rows by rank, and a chi-square test is applied to the column sum of the ranks. Data were ordered by state to find interstate differences and ordered by classes of district to determine differences among them. The level of significance chosen was .05. With three degrees of freedom, (comparisons among states), chi-square = 7.82 is significant at the .05 level. With five degrees of freedom (comparisons among classes of district), chi-square = 11.07 is significant at the .05 level.

Limitations

The comprehensive nature of the data desired by the investigators is evident from the data-gathering forms. Data were sought which are not found in public records outside each district. Some of the data are not readily available from current record systems in any school district. The herculean task of providing the data was performed by each of the districts in an exceptionally efficient manner. As careful and thorough as was their reporting, some limitations exist. In some instances, the limitations were the result of misunderstandings regarding instructions for completing the forms. Illustrative of information not always available are census summaries and analyses, and information on continued education of graduates, non-instructional staff, and property insurance. Difficulties varied by state and classes of school district. Specific limitations in the data will be noted in the appropriate section. Undoubtedly, the nature of reports requested by the state educational agency and data required to calculate allotments of state support dictate the type of information collected and contribute to the variation among states. Some data for Newark, Portland, Memphis, Know County and Milwaukee were obtained from a selected sample of schools within each system.

Support of Education and Municipal Services

Cursory examination of data describing property tax rates for support of education and support of municipal services revealed major differences among districts. The following detailed analysis is directed toward discovery of any pattern of variation in tax rates by classes of district when county, municipal, and school taxes are considered. Comparable data are presented for the six districts of New Jersey, Oregon, Tennessee, and Wisconsin.

New Jersey

A wide discrepancy in county and municipal tax rates is evident in the New Jersey school districts studied. This situation is shown in Table 7.1.

TABLE 7.1

NEW JERSEY TAX RATES ON 100 PERCENT ASSESSED VALUE
BY GOVERNMENTAL UNITS, 1962

School District	Total Mill Rate	County Mill Rate[a]	Municipal Mill Rate[a]	School Mill Rate
Newark	50.32	7.43	24.99	17.90
Trenton	42.27	5.22	21.94	15.12
Morristown	28.75	3.62	9.81	15.32
Bloomfield	32.90	8.24	9.51	15.15
Deptford (Township)	24.81	4.06	-	20.75
Newton	33.83	4.56	8.15	21.12

[a] Exclusive of school rate

The above table shows the tax rate for all purposes to vary from 24.81 mills to 50.32 mills in the six districts studied. Thus, for property of equal valuation, it appears that some taxpayers are paying over twice as much local property tax as is being paid by others. In the two communities with widest variation in total rate, the county tax rate varied from 4.06 to 7.43 mills and the municipal tax rate from no reported levy to 24.99 mills. The school tax levy appears to serve as an equalizer in this case, reducing the difference in total tax rate by 2.85 mills. The impact on local finance would be substantial if tax rates for school purposes were equalized, even if existing differences in county and municipal tax rates were to continue. If a state support program for education brought about equalization of tax rates for all purposes, the effect would be tremendous.

Oregon

Since three of the six Oregon districts studied have many separate taxing districts within the school district, a direct comparison of tax rates is difficult. When comparisons are made, a large share of the difference in total tax rates can be accounted for by the variation in mill rates for municipal purposes. This may be illustrated in Portland by comparing the tax rate for municipal purposes for the portions of the school district which are within and outside the city limits of Portland. In this comparison all tax rates except those for municipal purposes are identical, as Table 7.2 shows.

TABLE 7.2

COMPARATIVE TOTAL TAX RATES ON ASSESSED VALUATION
OF THE PORTLAND SCHOOL DISTRICT

District	Rates					
	County	Port of Portland	School District Joint 1	Rural School Board	Municipal	Total
City of Portland (mills)	17.2	1.6	17.0	13.7	23.1	72.6
Outside City of Portland (mills)	17.2	1.6	17.0	13.7	--	49.5

Variation in tax rate among the six Oregon districts may be seen by comparing tax rates of the major taxing units within each school district. This information is shown in Table 7.3. Less variation in total tax appears among Oregon school districts than among those in the other three states. The highest rate is found in Portland with 25.8 mills; the lowest in Salem (Polk County) with 18.6 mills. When tax rates levied by major taxing units are examined individually, considerable variation is noted; for example, the highest county tax rate is nearly three times the lowest. Variation in the school tax rate, while not arresting percentagewise, ranges from 10.8 mills in one district to 18.5 mills in another, based on assessments at 100 percent of true cash value.

TABLE 7.3

OREGON TAX RATES ON TRUE CASH VALUE BY UNITS OF GOVERNMENT 1961-62

School District	Total Mill Rate	County Mill Rate	Municipal Mill Rate	School Mill Rate	Others
Portland (Multnomah Co.)	25.8	6.0	8.3	10.8	0.7
(Clackamas Co.)	21.9	2.2	8.6	11.1	-
Salem (Marion Co.)	19.3	3.2	4.8	11.3	-
(Polk Co.)	18.6	2.8	4.7	11.1	-
Astoria	22.7	2.7	6.5	12.5	1.0
Oregon City	24.9	2.1	6.9	14.8	1.1
Lake Oswego (Clackamas Co.)	22.9	2.2	2.2	18.5	-
Dallas	21.7	2.8	4.3	14.3	0.3

Tennessee

While property tax rates are low in Tennessee compared with the other states studied, the percentage difference in total and municipal tax rates levied within school districts is great. Tax rates for schools, as well as for other purposes, show a wide variation in Tennessee. In the more rural areas no tax is reported for municipal purposes. Tax rate details for the six Tennessee districts are shown in Table 7.4.

TABLE 7.4

TENNESSEE TAX RATES ON ASSESSMENTS AT 100 PERCENT TRUE CASH VALUE BY GOVERNMENTAL UNITS, 1962

School District	Total Mill Rate	County Mill Rate[a]	Municipal Mill Rate[a]	School Mill Rate[b]
Memphis	20.05	3.70	5.20	11.15[d]
Johnson City	20.40	4.68	4.47	11.25[c]
Tullahoma	11.53	3.26	4.00	4.27
(Coffee County)	7.61	3.26	-	4.36
Alcoa	8.70	2.86	1.24	4.60[c]
Knox County (suburban)	15.93	4.41	-	11.52[c]
Knoxville (city)	29.88	4.41	10.31	15.17[c]
Lake County (rural)	9.25	5.33	-	3.93
Lake County (Tiptonville)	14.25	5.33	5.00	3.93

[a] Exclusive of School tax rate

[b] Combined local and county levy for schools

[c] Includes debt

[d] Includes both debt and transport

Knoxville had the highest total tax rate of the districts for which data were collected. Its tax rate of 29.88 mills compares with a low of 7.61 mills in Coffee County. County tax rates in some districts were nearly twice as high as in others and the municipal tax rate varied from zero to

10.31 mills in the six districts studied. School tax rates were nearly four times as high in Knoxville as in Lake County.

Wisconsin

Tax rates on equalized valuation for school purposes are encompassed within a relatively narrow range in most Wisconsin school districts. Tax rates in the six districts studied, varied from 11.65 to 15.42 mills on equalized valuation. Thus, school tax rates in these six districts could be completely equalized without having major impact on state support of education or local property tax rates. As Table 7.5 shows, the focal point of the problem of equalization of tax rates in Wisconsin is not the school tax rate, but the tax rate for municipal and county purposes. Equalization of county and municipal tax rates would be, comparatively, a very expensive proposition in this state.

TABLE 7.5

WISCONSIN TAX RATES ON FULL EQUALIZED VALUATION, 1962

School District	Total Mill Rate[a]	County Mill Rate	Municipal Mill Rate	School Mill Rate
Milwaukee	35.59	9.48	13.12	12.79
Appleton (Calumet Co.)	24.66	4.00	5.81	14.65
(Outagamie Co.)	23.01	3.40	5.51	13.90
(Average of Towns)	15.46	1.71	0.84	12.71
Merrill	30.67	6.01	9.04	15.42
(Average of Towns)	21.27	5.88	2.86	12.33
Cudahy	27.64	9.45	6.39	11.60
Preble (Town)	22.43	5.83	2.86	13.54
(Average of Towns)	21.61	5.82	1.28	14.31
Richland Center (City)	32.08	12.44	7.87	11.57
(Boaz Village)	29.36	12.44	4.67	12.05
(Average of Towns)	26.68	12.90	1.93	11.65

[a] Also includes .2 mill tax levied by the state for reforestation purposes.

The municipal tax rate on full equalized valuation ranged from a high of 13.12 mills in Milwaukee to a low of .84 mills (average) in the towns in the Appleton school district. County tax rates show almost as great variation--from 12.90 mills in towns in the Richland Center school district to 1.71 mills in the towns in the Appleton school district. The above table demonstrates that, when considered in isolation, variation in the school tax rates in Wisconsin school districts studied is of minor consequence. However, if variation in the total property tax load among communities is considered, the problem invites renewed and energetic attention.

Other Considerations in Educational and Municipal Finance

Examination and comparison of data relative to tax rates for education and other municipal services suggests that relationships exist between municipal and educational support which should not be ignored. It is apparent, however, that variation in tax rates may be the result of differences in the level of services provided by municipal government. Predominantly rural areas frequently provide few governmental services, and many of those which are provided appear to be supported by the county with the cost borne in part by cities and villages within the county in proportion to their property valuation. Total tax rates on equalized valuation of property in larger municiplaities appear high by comparison, not necessarily because of school tax differentials but because of the tax levied for county and municipal purposes. Certain areas do not have and do not desire the services required in larger municipalities. Certain services are foregone by the people in some areas and provided privately in others.

It is much easier to identify the problem of inequality of tax rates in the districts studied than to prescribe a solution or devise a support model which recognizes these differences. A complicating factor in the integration of school finance and municipal finance is the number of governmental units included in part or in whole within school districts, and the variety of functions performed by these governmental units. If drainage districts, water districts, park districts, sewer districts, and all of the other special taxing districts found in most states are included, a bewildering array of taxing authorities is often encountered within a large school district. In all probability, satisfactory coordination of services, tax rates, etc., of schools and municipal governments will require a reduction in the number of separate taxing authorities and a reorganization designed to achieve coordinated tax rates for all types of public service. Reorganization of school districts in many states has proceeded rapidly in recent years. Comparatively, the pace of local governmental reorganization has been slow. Unless and until some method of stimulating reorganization of local governmental units is found, integration of school finance and municipal finance will be seriously impeded.

Distinguishable Differences at the Operational Level

District Budgets

An analysis was made of the 1962-63 budgets of each of the 24 districts participating in the study. The budget categories of capital outlay, debt service, transportation, and community services were not subjected to analysis because of their annual fluctuations. Only items normally considered to be included in current operation were studied and compared; i.e., administration, instruction, attendance and health services, operation, maintenance, and fixed charges. These major budget items were subdivided for analysis into the following categories:

- Administration
    - Salaries
    - Consumable supplies
    - Contracted service-legal-audit
    - Travel
    - Other

Instruction
    Salaries
        Principals and supervisors
        Teachers
        Clerical
        Other
    Supplies and materials
        Textbooks
        Library and audio-visual
        Travel
        Other

Attendance and Health Service
    Attendance salaries
    Attendance other
    Health salaries
    Health other

Operation
    Salaries
    Custodial supplies
    Utilities and heat
    Contracted service-other

Maintenance
    Salaries
    Supplies and materials
    Contracted service
    Other

Fixed Charges
    Social security, employee retirement
    Insurance
    Rentals
    Other

The percentage of the total budget for current operation allocated to each of the above categories was calculated for each district. An analysis was made of these budget allocations using the Friedman two-way analysis of variance by ranks to test the significance of the observed differences shown in Table 7.6.

Tennessee had the greatest percentage allocation of the current operating budget for instruction and instructional salaries, followed in order by New Jersey, Oregon, and Wisconsin. New Jersey had the greatest percentage allocation for attendance and health service, followed in order by Oregon, Tennessee, and Wisconsin. In percent of expenditures allocated to operation Wisconsin ranked first, followed by New Jersey, Oregon, and Tennessee. Much of the lead for Wisconsin and New Jersey in this category arose from expenditures for heat and utilities and salaries. Oregon ranked high in percentage allocation for fixed charges followed by New Jersey, Wisconsin, and Tennessee. Much of the Oregon lead was in the area of employee retirement.

TABLE 7.6

CHI-SQUARE VALUES FOR PERCENTAGE ALLOCATION OF BUDGETS
RANKED BY DISTRICTS AND STATES

Budget Categories	Among Districts[a]	Among States[b]
Administration	10.85	1.7
Instruction	6.86	11.4
Attendance and Health	6.61	11.0
Operation	7.29	11.8
Maintenance	3.25	2.6
Fixed Charges	9.29	12.6

[a]With 5 d. f., chi-square at .05 = 11.07

[b]With 3 d. f., chi-square at .05 = 7.82

A similar analysis was made for significant differences among classes of district. At the .05 level, no significant difference was revealed among districts in any of the above categories as shown in Table 7.6. This analysis, supported by observation, suggests that percentage allocations to budget categories within the budget for current operation are random among the districts represented in this study.

Budgets of the 24 districts were also analyzed to determine the dollar allocation per pupil enrolled. These allocations for the major budget categories are shown in Table 7.7. A Friedman two-way analysis of variance by ranks performed on this data provided the chi-square values shown in Table 7.8.

TABLE 7.7

PER-PUPIL EXPENDITURES BY BUDGET COMPARISON IN 24 SCHOOL DISTRICTS, 1962-63 SCHOOL YEAR

Districts	Adm.	Inst.	Att. & Health	Trans.	Food	Comm. Ser.	Oper.	Main.	Fixed Chg.	Cap. Outlay
Newark	$13.10	$374.69	$12.82	$3.79	$22.20	$17.29	$45.26	$15.41	$14.23	$ .16
Portland	13.41	350.87	5.80	2.00	.64	1.46	45.26	28.80	29.07	12.40
Memphis	6.77	188.31	-	-	-	.90	18.69	7.06	9.53	7.01
Milwaukee	13.78	326.52	5.23	4.22	17.36	21.40	42.90	44.21	11.95	105.48
Trenton	12.39	335.41	16.33	1.52	1.57	1.31	57.44	38.59	16.38	2.53
Salem	8.64	324.67	1.92	10.22	1.12	4.77	35.16	10.18	23.77	16.41
Johnson City	5.28	216.51	1.87	1.37	.66	6.10	22.56	9.85	1.95	4.15
Appleton	10.93	336.55	6.61	9.45	.68	-	47.48	15.47	11.15	12.78
Morristown	23.32	493.68	15.04	13.72	2.70	1.64	67.53	32.91	20.75	20.65
Astoria	15.92	394.11	.10	13.11	1.23	-	48.97	38.59	31.53	7.68
Tullahoma	9.06	181.03	1.27	-	7.42	-	18.14	6.56	3.64	1.12
Merrill	15.27	301.67	-	61.61	27.92	-	43.73	9.00	5.69	19.88
Bloomfield	14.12	423.36	10.69	4.87	.13	1.32	55.32	28.10	19.25	2.59
Oregon City	12.26	333.14	3.86	17.46	2.76	.32	42.17	18.98	29.46	20.49
Alcoa	14.04	231.03	.14	1.09	-	-	16.71	6.57	5.19	18.03
Cudahy	15.85	346.18	.70	5.85	2.07	.95	46.69	18.79	15.20	19.06
Deptford	16.41	273.02	4.38	20.82	1.04	-	37.46	6.36	7.44	4.05
Lake Oswego	12.45	373.20	1.61	17.99	.11	-	45.03	13.06	28.66	5.41
Knox County	5.67	185.35	.54	12.04	8.36	2.45	18.78	8.75	2.52	6.38
Preble	13.93	295.26	-	30.73	18.06	.12	46.06	7.30	8.45	7.92
Newton	21.87	408.12	6.45	-	2.21	-	46.64	34.37	9.90	22.82
Dallas	16.45	292.76	.12	22.93	.30	-	33.49	15.37	24.43	7.52
Lake County	7.41	148.61	1.95	16.68	.33	-	13.85	6.93	3.17	369.95
Richland Center	12.40	229.47	2.79	38.60	25.52	3.22	34.67	12.07	5.99	19.89

TABLE 7.8

CHI-SQUARE VALUES FOR DOLLAR ALLOCATION PER PUPIL RANKED BY DISTRICTS AND STATES

Budget Categories	Among Districts[a]	Among States[b]
Administration	12.29	11.0
Instruction	7.43	12.2
Attendance and Health	6.46	11.6
Operation	7.57	12.8
Maintenance	3.14	7.4
Fixed Charges	10.00	17.0

[a] With 5 d.f., chi-square at .05 = 11.07

[b] With 3 d.f., chi-square at .05 = 7.82

Only the per-pupil allocation for administration is significant at the .05 level for differences among districts. There is some indication that there may be economies of scale with diminishing returns beyond an optimum size of district in expenditures in this category, since the sum of the ranks of medium cities was least, followed by large cities.

In analyzing differences among states, all categories demonstrated significant differences with the exception of maintenance. Inspection of the raw data suggests that much of the variance found in allocations for administration, instruction, attendance and health service, and operation may be attributed to rather consistent differences in salary level among the four states. Variance in the fixed charges category is largely attributed to differences in retirement plans and method of funding these plans among the four states.

General Information

General information about each district reported on Form 1 included information relative to the organization and operation of the district. The data on these items of information were relatively complete. Data describing the school year, school day, school census, district organization, number of graduates continuing education, transportation, lunch programs, recreation programs, attendance services, special service personnel, community services, service to non-public school pupils, and special education were summarized and analyzed to identify differences and similarities.

School Year

The number of days in the school year in the 24 districts varied from a low of 175 days to a high of 200 days. This information is summarized in Table 7.9. The length of the school year appears to be more closely related to state requirements than to class of district. There seems to be little intra-state variation from the state average in number of days in the school year.

TABLE 7.9

NUMBER OF DAYS IN SCHOOL YEAR, 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

District	Number of days in Year	State Average of Six Districts	Percent of State Average
Milwaukee	190	188.3	100.9
Appleton	190	188.3	100.9
Merrill	190	188.3	100.9
Cudahy	190	188.3	100.9
Preble	187	188.3	99.3
Richland Center	183	188.3	97.2
Memphis	200	195.8	102.1
Johnson City	200	195.8	102.1
Tullahoma	200	195.8	102.1
Alcoa	175	195.8	89.4
Knox County	200	195.8	102.1
Lake County	200	195.8	102.1
Portland	189	187.7	100.7
Salem	184	187.7	98.5
Astoria	188	187.7	100.2
Oregon City	190	187.7	101.2
Lake Oswego	190	187.7	101.2
Dallas	185	187.7	98.6
Newark	185	185.5	99.7
Trenton	189	185.5	101.9
Morristown	184	185.5	99.2
Bloomfield	185	185.5	99.7
Deptford	189	185.5	101.9
Newton	181	185.5	97.6

One specific item describing the school year, number of days devoted to in-service activity, was analyzed statistically. Ranking the number of days of in-service training by class of district yeilds chi-square = 8.7 which is not significant at the .05 level. However, small cities tended to have the greatest number of days devoted to in-service training; large cities the least.

School Day

The number of minutes in the school day is summarized in Table 7.10. The school day was categorized by grade groups: grades 1-3, grades 4-6, grades 7-9, and grades 10-12. The average number of minutes in the school day for each group was computed and the Friedman analysis was applied. No significant difference was found among districts in number of minutes in the school day for grades 1-3, 4-6 or 7-9 (chi-square = 9.4, 7.2, and 2.9, respectively). The difference in the number of minutes in grades 10-12 (chi-square = 13.1) is significant. The medium cities tended to have the longest school day and the large cities the shortest school day in grades 10-12.

School Census

School census data were often incomplete, and when comparisons with other data were made, results were sometimes conflicting. Several limitations discovered while working with these data warrant notation:

1. School census was reported by age, while school enrollment was reported by grade level. In making comparisons, it was assumed that age six from the census was directly comparable to grade one from enrollments, age seven to grade two, etc. It is obvious, of course, that all first graders are not six years old, all second graders are not seven, etc. A close approximation should exist, although this was not always true.

2. No school census data was available from any of the Tennessee school districts or from Newark, Bloomfield, or Deptford in New Jersey. Hence, it was necessary to take data directly from the 1960 U. S. Census. The adjustment required to make the 1960 data directly comparable to 1962 school reports was accomplished by applying as a factor the anticipated change in population ages 5-11 and 12-17 given in a National Education Association report.[2]

3. In four of the Tennessee school districts and in Trenton, New Jersey, the school census was less than the reported school enrollment in the high school grades. This may be caused by one or a combination of the following situations: loose classification of non-resident students, lack of accounting of all students, or an age span considerably in excess of the assumed age for high school attendance.

4. The Wisconsin agricultural service center presented a special problem. The census reported was taken just prior to a major reorganization of the school district. Hence, the enrollment in the 1962-63 school year was considerably larger than the reported census for 1962. The 1963 census totals were not available.

In spite of the above limitations the school census was compared with the reported school enrollment to determine the percentage of school age children attending the public schools. These percentages are summarized in Table 7.11 in three categories: percent of the total enrollment, percent of high school enrollment, and percent of elementary enrollment. The number of children reported as ungraded were apportioned among all twelve grades. A Friedman analysis revealed no significant difference among classes of district when ranked according to percentage of total school-age children enrolled in public school (chi-square = 4.6).

TABLE 7.10

AVERAGE OF NUMBER OF MINUTES BY GRADE LEVEL, 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

	Grades			
District	1-3	4-6	7-9	10-12
Milwaukee	345	345	355	355
Portland	290	330	330	330
Memphis	360	360	360	360
Newark	330	330	313	280
Appleton	315	330	352	391
Salem	280	330	395	395
Johnson City	365	405	420	420
Trenton	315	315	370	375
Merrill	320	340	355	375
Astoria	300	360	368	385
Tullahoma	365	385	390	390
Morristown	315	315	422	415
Cudahy	335	345	373	400
Oregon City	293	370	372	372
Alcoa	360	360	360	360
Bloomfield	315	315	375	360
Preble	335	375	401	394
Lake Oswego	235	350	380	380
Knox County	355	395	394	390
Deptford	240	330	385	385
Richland Center	300	330	400	400
Dallas	279	330	355	342
Lake County	360	360	360	360
Newton	266	286	330	330

TABLE 7.11

REPORTED DISTRICT ENROLLMENT AS PERCENT OF SCHOOL CENSUS IN 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

District	Percent of Total Enrollment	Percent of High SSchool Enrollment[a]	Percent of Elementary Enrollment[b]
Milwaukee	66.1	74.8	62.9
Newark	79.4	52.5	90.3
Memphis	92.2	72.9	99.1
Portland	88.2	86.9	88.7
Appleton	64.9	77.8	60.1
Trenton	99.4	97.1	100[c]
Johnson City	100[c]	100[c]	100[c]
Salem	97.4	93.8	98.5
Merrill	64.7	87.9	52.2
Morristown	75.7	43.3	100[c]
Tullahoma	100[c]	100[c]	100[c]
Astoria	68.4	29.1	86.7
Cudahy	64.1	81.0	57.9
Bloomfield	69.5	80.4	64.5
Alcoa	100[c]	100[c]	100[c]
Oregon City	89.8	90.6	89.4
Preble	49.1	83.7	37.0
Deptford	70.7	43.9	79.5
Knox County	100[c]	100[c]	100[c]
Lake Oswego	90.6	95.8	88.5
Richland Center	-	-	-
Newton	63.5	31.6	92.7
Lake County	87.0	51.2	100[c]
Dallas	87.2	88.4	86.7

[a] grades 9-12) ⎰ungraded apportioned
[b] grades 1-8) ⎱among grades 1-12
[c] reported enrollment exceeded reported census

District Organization

Information on district organization is presented in summary form in Table 7.12. No similarity of organization can be noted by states. However, in line with national trends there seems to be a predominance of six-year elementary schools. Each of the medium cities studied employed a 6-3-3 organization.

Graduates Enrolled in Various Areas of Higher Education

Some school systems apparently made no follow-up studies of graduating classes and, therefore, had no data to report. Other school systems reported a follow-up study which gave only percentages of those who had gone on to school. Table 7.13 presents this information in summary form. Visual inspection indicates no apparent relationship among classes of district and numbers of high school graduates continuing their formal education. This would suggest that college attendance is a function of factors other than class of district.

Pupil Transportation

Pupil transportation was analyzed in terms of cost per pupil transported (annual cost of transportation - budget or contract figure - reported on Form I). Three districts reported no transportation while three other districts transported more than fifty percent of the student body. Two districts transported special pupils only. Cost of transportation varied from $26.27 to $128.91 per pupil transported. It appears that there are some economies of scale in pupil transportation, and that per-pupil costs vary with pupil density, geographic conditions, and size of district.

The budgeted amount for transportation was expressed as a percent of the sum of the 1962-63 budgeted amounts for current expense and transportation. The percent of the budget allocated to transportation ranged from 0.3 to 13.2 percent. A Friedman analysis of variance by ranks yields chi-square = 7.3, which is not significant at the .05 level. Hence, we may conclude that the proportion of the budget allocated to transportation will not differentiate classes of district. Transportation information is summarized in Table 7.14.

School Lunch Program

Examination of school lunch information is summarized in Table 7.15 and reveals that most districts charge between 25 and 30 cents per meal, that taking lunch at school is optional, and that the number of meals served per day is closely related to the size of the district.

Recreational Program

While all districts except one reported some type of recreational program, no single pattern of support--city, county, or school district--emerged. The amount budgeted for recreation and the number of activities provided in the recreation program appear to vary directly with size of the district. No relationship between recreation and educational finance could be ascertained.

TABLE 7.12

ORGANIZATION OF SCHOOL SYSTEMS IN 24 DISTRICTS IN FOUR STATES, 1962-63

District	Grade Organization	Number of Elementary Schools					No. of Jr. High	No. of Sr. High
		1-4	5-8	9-16	17-24	Other		
Newark	6-3-3 8 8-4	0	2	1	11	36	6	8
Trenton	6-3-3	0	1	8	9	0	5	1
Morristown	6-2-4	0	0	0	0	3	1	1
Bloomfield	6-3-3	0	0	4	5	1	2	1
Deptford Town.	6-3-3	5	1	3	1	0	(1 Jr.-Sr. High)	
Newton	8-4	0	0	0	0	1	0	1
Memphis	6-3-3	0	0	0	79	0	12	21
Johnson City	6-3-3	1	8	0	0	0	2	2
Tullahoma	6-3-3	0	0	0	4	0	2	2
Alcoa	6-2-4	1	1	1	1	0	0	2
Knox County	1-8,1-6,1-12 & 7-12	14	13	14	24	3	0	10
Lake County	6-6	4	0	2	0	0	0	3
Milwaukee	6-3-3 (some 8-4)	0	11	30	56	21	12 (3 Jr.-Sr. High)	10
Appleton	6-3-3	1	3	7	6	0	3	1
Merrill	6-3-3	2	6	2	0	0	1	1
Cudahy	8-4	0	0	2	3	0	0	1
Preble	6-2-4	3	3	2	0	0	1	1
Richland Center	8-4 (rural); 6-2-4 (city)	20	1	1	0	0	0	1
Portland	8-4	0	6	17	41	23	0	12
Salem	6-3-3	8	6	6	11	1	5	2
Astoria	6-2-4	0	0	0	3	0	1	1
Oregon City	6-3-3	4	1	4	1	0	1	1
Lake Oswego	6-3-3	0	0	1	4	0	1	1
Dallas	6-3-3	4	3	0	0	0	1	1

TABLE 7.13

PERCENT OF GRADUATES ENROLLED IN POST HIGH SCHOOL PROGRAMS EXPRESSED AS PERCENT OF ENROLLMENT IN GRADES 10-12, BY DISTRICT CLASSIFICATION

District	4 Yr. College	University Ext.	County Teacher	Nursing	Business College	Vocational or Technical	Other
Portland	no comparable data						
Milwaukee	7.5	0.3	0.2	0.4	0.4	1.5	0.0
Newark	6.0	0.0	0.0	0.2	0.3	0.4	5.0
Memphis	no comparable data						
Salem	1.0	0.0	0.0	0.0	0.0	0.1	0.0
Appleton	7.2	2.9	0.0	0.2	0.4	0.3	0.5
Trenton	6.7	0.0	1.2	0.0	0.5	0.7	0.7
Johnson City	12.4	0.0	0.0	0.3	0.3	0.0	0.0
Astoria	16.5	0.0	0.0	0.0	1.8	0.0	2.0
Merrill	4.9	0.8	0.9	0.4	0.5	1.9	0.0
Morristown	6.1	0.0	0.0	0.4	1.1	0.7	0.0
Tullahoma	10.1	0.0	0.0	0.0	1.4	0.4	0.3
Oregon City	6.8	0.0	0.0	0.1	0.1	0.0	2.4
Cudahy	7.0	1.1	0.0	0.0	0.0	0.0	0.0
Bloomfield	1.9	0.0	3.8	1.3	1.6	7.3	1.6
Alcoa	16.8	0.0	0.0	1.1	0.4	0.9	0.0
Lake Oswego	no comparable data						
Preble	3.1	2.6	0.3	0.1	0.4	4.9	0.0
Deptford	1.9	0.0	3.8	1.3	1.6	7.3	1.6
Knox County	20.4	0.0	0.0	0.7	0.5	0.2	0.0
Dallas	10.5	0.0	0.0	0.2	0.6	0.4	0.6
Richland Center	8.2	0.0	1.3	1.3	0.4	3.0	0.0
Newton	8.4	1.1	0.0	1.5	1.3	0.3	0.0
Lake County	6.7	0.0	0.0	1.1	1.1	0.4	5.2

TABLE 7.14

TRANSPORTATION DATA FOR 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

District	No. of Pupils Transported	Total Transportation costs	Cost per Pupil Transported	% of Enrollment Transported	% of Budget for Transportation[a]
Portland	2,270	$148,256	$ 65.31	3.1	0.8
Milwaukee	5,353	418,105	78.10	4.8	1.0
Newark	special pupils only, no report on numbers				0.7
Memphis	no transportation				
Salem	6,702	176,039	26.27	35.1	2.5
Appleton	1,147	77,702	67.19	12.1	2.2
Newton	356	45,893	128.91	2.2	0.3
Johnson City	86	5,331	61.99	1.3	0.5
Astoria	751	24,100	32.09	37.0	2.4
Merrill	1,546	163,972	106.06	51.4	13.2
Morristown	not reported	26,950	-	-	2.0
Tullahoma	no transportation				
Oregon City	2,065	56,848	27.53	52.9	3.8
Cudahy	147	14,200	96.60	4.8	1.3
Bloomfield	473	21,284	44.99	6.0	0.9
Alcoa	31	1,800	58.06	1.7	0.4
Lake Oswego	3,595	73,985	20.58	82.6	3.7
Preble	1,231	80,000	64.99	43.4	7.3
Deptford	2,253	98,200	43.59	50.7	5.6
Knox County	4,052	373,271	92.12	12.0	5.0
Dallas	1,152	53,767	46.67	49.1	5.7
Richland Center	836	90,000	107.66	37.1	10.7
Newton	no transportation				
Lake County	not reported	38,450	-	-	8.4

$^{a}\dfrac{\text{district budget for transportation}}{\text{district budget for current expense plus transportation}}$

TABLE 7.15

SCHOOL LUNCH PROGRAMS IN 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

District	(per day) Number of Meals Served	Charge per Meal to Pupil	Taking Lunch at School: Optional	Required
Portland	33,500	$ .25 elem.	x	
Milwaukee	30,000	.25 elem. .30 sec.	x	
Newark	12,750	.35 elem. & Jr. high .37 Sr. high	Optional in elem. & Jr. high Required in Sr. high	
Memphis	51,517	.25	x	
Salem	9,198	.25 elem. .30 Jr. high .35 Sr. high	x	
Appleton	not reported	.40 Jr. high	x	
Trenton	6,544	.22	x	
Johnson City	490	.25	x	
Astoria	919	.25 elem. .35 high	x	
Merrill	1,147	.25 elem. .30 high	x	
Morristown	757	.35	K-6	7-12
Tullahoma	2,812	.25	Required at high school Optional at Jr. high and elem	
Oregon City	1,910	.25 elem. .30 Jr.-Sr. high	x	
Cudahy	240	.25	x	
Bloomfield	900	.35	x	
Alcoa	Not reported	.25	x	
Lake Oswego	2,200	.25 elem. .30 Sr. high	x	
Preble	427	.30	x	
Deptford	595	.30		x
Knox County	158	.25	x	
Dallas	700	.25	x	
Richland Center	950	.30 high .25 elem.	x	
Newton	400	.30 high .25 elem.	x	
Lake County	1,540	.25	x	

Attendance Services

Information was requested relative to the number of full-time equivalent employees in the attendance office. This figure was used in computing the number of students enrolled per full-time attendance worker. For districts employing attendance workers this ratio ranged from 449 to 21,049. (Three districts reported no attendance personnel of any kind.) A Friedman analysis of variance by ranks yielded chi-square = 8.4, which is not significant at the .05 level. Thus we may conclude that number of pupils per full-time attendance worker does not distinguish among classes of district.

Special Service Personnel

Data regarding the number of special service personnel employed by each district is summarized in Table 7.16. Of the seven types of special service personnel reported, only guidance personnel and teachers of homebound pupils are nearly always supported by school district funds. No definite pattern of support for other services was apparent. Some services are supported by the city and/or county as well as by the school district.

Community Services

All but two districts reported expenditures for public library services. Although seven districts did not report budget allocations for school library services on Form I, analysis of the budgets revealed that all but one contained an item for library services. Ten of the 24 districts included expenditures for welfare in the school budget. The total amount budgeted for welfare type activities ranged from $500 to $322,715.

Service to Non-public School Pupils

Three districts reported providing instructional service for non-public school pupils. The cost ranged from $1,200 in Morristown to $325,954 in Portland. Four districts reported providing attendance services for non-public school pupils, and four reported providing health services for non-public school pupils. Appleton spent the most for these services--$7,219. Five districts, including four in Oregon, reported providing transportation for non-public school pupils. The cost range was from $460 in Astoria to $30,056 in Portland.

Special Education

All districts except one reported some type of special education program, the most common being remedial speech programs and programs for educable or trainable mentally handicapped children. As might be expected, the large cities offer the largest number of programs in special education and the agricultural service centers the fewest. Programs for the "culturally deprived" apparently are not recognized as an area of special education, as none of the 24 districts reported programs designated by this title. Seven districts reported classes for accelerated students. These districts represented all four states and each class of district except the established suburb.

TABLE 7.16

SPECIAL SERVICE PERSONNEL IN 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

City	Number of Personnel in Full-time Equivalents						
	Guidance	Nurses	Psychologists	Psychometrists	Psychiatrists	Social Workers	Teachers of homebound
Milwaukee	50-S	446-Co 150-Ci	20-S 1-Co	-	16-Co	41-S 273-Co	16-S
Appleton	6-S	3-S 1-Ci	1-S	3-S	-	1-S 3-Ci 14-Co	0.5-S
Merrill	4-S	1-Ci 1-Co	-	0.2-S	-	2-Co	0.5-S
Cudahy	2-S	4-Ci	-	1-Co	-	-	3-S
Preble	3-S	.5-S	-	-	1-Co	8-Co	2-S
Richland Center	1-S	1-S 1-Co	-	-	-	4-Co	0.25-S
Trenton	16-S	21-S 18-Ci 3-Co	3-S	-	1-S	6-S 23-Ci 32-Co	5-S
Morristown	6-S	4-S	1-S	-	1-S	1-S	-
Bloomfield	12-S	7-S	2.5-S	-	-	2-S	16-S
Newton	5-S 1-Co	2-S 1-Ci 3-Co	1-Co	1-Co	1-Co	1-Co	5-S
Newark	45-S	57-S	10-S	-	1-S	25-S	18-S
Memphis	65-Ci	-	5-Ci	-	-	-	-
Johnson City	2.5-S	1-S	-	-	-	-	1-S
Tullahoma	1-S	-	use state psychologists	-	-	Co	1-Ci
Alcoa	1-Ci	-	-	-	-	-	5-Ci
Knox County	15-S	-	0.5-Co	-	-	-	9-S
Lake County	-	6-Co	-	-	-	-	2-S
Portland	100-S	City	6-S	7-S	2-S	28-S	3-S
Salem	6.5-S	8-S	1-S	1-S	-	1-S	10-S
Astoria	3-S 3.5-Co	3-Co	-	-	-	6-Co	-
Oregon City	2-S	2-S	3-Co	-	1-Co	35-Co	2-S
Lake Oswego	6-S	1-S	1-S	-	-	-	1-S
Dallas	-	2-Co	-	-	-	2-Co	1-S
Deptford	4-S	2-S	-	-	-	1-Ci	6-S

Co=County supported
Ci=City supported
S -School supported

Age-Grade Distribution

The 24 school districts were asked to report the distribution of pupils by age in grades K-12. Where this data was not reported estimates were made as follows:

1. Portland, grades 9-12; ages were distributed according to the averages of the other city districts in Oregon.

2. Johnson City, grades 9-12; ages were distributed according to the average of the other city districts in Tennessee.

3. Newark, grades K-12; age distribution for the entire district was assumed to be the same as that of the reported sample.

4. Deptford, grades 7-12; ages were distributed according to the average age distribution percentages in Trenton, Morristown, and Newton (where K-6 distributions most closely resembled Deptford's).

5. Newton, grades K-12; age distribution for the total school population was assumed to be the same as reported for resident pupils only.

6. Only 14 of the 24 districts reported kindergartens. Therefore, the age distributions reported therein were not considered in the analysis.

A three-year age span was assumed "normal" for each grade to cover minor variations in entrance age policies, reporting dates, and organization of data. Thus, ages 5, 6, and 7 were considered "normal" for the first grade; ages 6, 7, and 8 for the second grade; and so on through ages 16, 17, and 18 for the twelfth grade. Pupils reported above these ages in their respective grades were summed and considered "overage" and pupils reported below these ages were considered "underage". The total numbers of pupils over and under age in each grade were expressed as percents of total enrollment in the grade. These percentages were ranked by classes of school district and by states. A Friedman two-way analysis of variance by ranks was used to test the hypothesis that classes of school district are homogeneous with respect to percent of pupils "overage" and "underage" in each grade.

Table 7.17 shows the relative percent contributed by each of the school districts and classes of district in the sample to the total number of pupils "underage". It should be noted that in the 24 districts a total of only 150 pupils were reported as "underage" according to the above definition.

A test of aggregate percents of pupils "underage" in all grades (1-12) ranked by classes of school district yields chi-square = 3.32, and of the percents ranked by states yields chi-square = .90. Neither of these values are significant at the .05 level. Visual inspection of percentages reported by each grade of "underage" supports the statistical finding of no significant difference in variance among classes of school district or states.

TABLE 7.17

RELATIVE PERCENTS OF "UNDERAGE" PUPILS IN TOTAL SAMPLE BY STATES AND CLASSES OF SCHOOL DISTRICT

	State				
Class of District	Wisconsin	Oregon	Tennessee	New Jersey	Total
Large City	1.65	2.45	2.18	3.24	9.52
Medium City	.00	.00	8.47	1.72	10.19
Small City	.00	5.82	.00	.00	5.82
Established Suburb	7.81	4.50	.00	.00	12.31
Developing Suburb	5.10	4.50	4.17	3.90	17.67
Ag. Service Center	20.85	3.11	.00	20.52	44.48
Total:	35.41	20.38	14.82	29.38	99.99

Table 7.18 shows the relative percent contributed by each of the school districts in the sample to the total number of pupils "overage".

TABLE 7.18

RELATIVE PERCENTS OF "OVERAGE" PUPILS IN TOTAL SAMPLE BY STATES AND CLASSES OF SCHOOL DISTRICT

	State				
Class of District	Wisconsin	Oregon	Tennessee	New Jersey	Total
Large City	3.67	.38	19.09	3.76	26.90
Medium City	.00	.82	8.55	5.31	14.68
Small City	2.11	.87	4.22	5.36	12.56
Established Suburb	2.09	.30	5.97	1.46	9.82
Developing Suburb	1.18	.47	4.70	7.41	13.76
Ag. Service Center	1.03	.48	15.81	4.96	22.28
Total:	10.08	3.32	58.34	28.26	100.00

Analysis of percent of "overage" pupils in each grade ranked by classes of school district and by states yields chi-square values as shown in Table 7.19.

Evaluated against chi-square values significant at the .05 level, it is obvious that the hypothesis of homogeniety of classes of school district with respect to "overage" children cannot be rejected. On the other hand, the large chi-square values found in the analysis by states indicates that "overageness" is a state problem.

Instructional Personnel

Information concerning instructional personnel in the 24 selected school districts was reported separately for elementary and secondary staffs. A form was completed by each staff member in 19 school districts. In each of the large city districts and Knox County a sample of schools judged to be broadly representative of the entire district was selected and each staff member in those schools completed a form. The data collected from approximately 6,000 teachers described salaries, total teaching experience, degrees held, years of formal education, and instructional responsibilities.

TABLE 7.19

CHI-SQUARE VALUES FOR SCHOOL DISTRICTS AND STATES OF OVERAGE PUPILS IN EACH GRADE

Grade	Chi-square Values for Ranks by Class of School District[a]	Chi-square Values for Ranks by States[b]
1	3.00	13.25
2	3.14	12.95
3	5.57	10.60
4	6.18	12.25
5	5.61	13.80
6	2.97	12.60
7	1.25	10.35
8	6.72	15.40
9	1.89	13.40
10	0.71	14.40
11	0.57	11.00
12	2.00	14.60
All grades	2.72	13.80

[a] With 5 d. f., chi-square at .05 = 11.07
[b] With 3 d. f., chi-square at .05 = 7.82

Mean and median teacher salaries and years of teaching experience were calculated for each school system. "Years of education" was expressed as the percent of staff in each system having 16 years or less, 17, 18, or 19 or more years of training. Highest degree held was calculated as the percent with less than bachelor's, bachelor's, master's, master's plus 30 hours, and doctor's degree. These data are summarized in Table 7.20.

The sum of the products of pupils per grade times hours per day of that grade times days of instruction per year was the expression of maximum potential pupil hours per year of instruction. The actual pupil hours per year of instruction for each teacher was calculated as the product of the number of pupils taught times the number of hours spent in actual teaching per day times the number of days per year. These products were summed to provide an expression of total actual instructional input. For those districts where a sample was used, a mean actual instructional input per teacher was calculated for the sample of teachers and multiplied by the number of teachers in the system to obtain the total actual instructional hours. The difference between the maximum potential pupil hours per year of instruction and the total actual instructional hours was taken as the measure of total non-instructional time allotted to such activities as study hall, homeroom, etc. Maximum potential instructional hours, actual instructional hours, and non-instructional hours could thus be expressed in terms of both teachers and pupils.

Per-pupil expenditure was calculated from district budget allocations for current expenditure. The expenditure per hour of actual instruction and per hour of maximum potential instruction was then determined. These data are given in Table 7.21.

TABLE 7.20

SALARIES, TRAINING, AND EXPERIENCE OF STAFF IN 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

School District	Salary		Experience		Years of Education (%)				Highest Degree Held (%)			
	Mean	Median	Mean	Median	16 or less	17	18	19 or more	less than BA	BA	MA	MA + 30 hrs. and Dr.
Milwaukee	$6587.43	$6725.00	15.8	11.4	62.9	23.8	6.9	6.4	2.6	75.6	21.8	-
Newark	7367.98	7875.00	13.9	10.5	32.8	25.6	20.1	21.1	7.0	46.9	41.3	4.8
Memphis	5198.68	5193.34	14.0	10.3	70.2	22.5	4.1	3.2	5.0	76.3	18.7	-
Portland	6714.07	7112.63	13.6	11.8	33.6	30.7	17.1	18.6	1.0	55.6	41.1	-
mean	6467.04		14.3									
Appleton	6082.20	6063.63	13.4	10.1	66.4	23.5	6.2	3.9	6.9	77.3	15.6	-
Trenton	6591.84	6827.50	16.6	14.3	44.2	28.9	10.8	16.1	11.6	58.2	28.1	2.0
Johnson City	4970.65	5106.58	19.0	17.0	58.6	23.7	6.9	10.8	0.4	76.3	23.2	-
Salem	5944.97	6350.52	12.7	10.1	38.9	25.6	25.6	9.9	1.1	68.8	29.6	0.6
mean	5897.41		15.4									
Merrill	5238.84	5325.00	13.2	9.6	78.4	18.7	3.0	.0	18.9	67.7	13.4	-
Morristown	6898.65	7092.11	14.9	11.5	35.3	28.8	19.6	16.3	5.4	50.2	43.9	0.5
Tullahoma	4062.03	4077.87	15.5	12.3	74.0	19.1	3.1	3.8	3.1	78.6	18.3	-
Astoria	6165.46	6500.66	17.1	17.1	42.7	33.0	12.6	11.7	9.6	71.1	19.3	-
mean	5591.24		15.2									
Cudahy	6352.03	6258.33	13.8	10.2	66.1	27.4	4.8	1.6	8.5	76.1	15.4	-
Bloomfield	6806.88	6500.00	13.3	8.3	38.7	31.6	16.6	13.2	3.4	51.7	43.0	1.9
Alcoa	4713.24	4671.88	14.3	12.3	76.4	15.9	5.8	2.9	2.9	85.6	11.6	-
Oregon City	6995.28	6105.77	12.1	10.0	46.0	29.4	11.7	12.9	2.7	66.5	30.3	0.5
mean	6216.85		13.4									
Preble	5519.09	5366.66	10.1	8.0	76.1	17.9	3.4	2.6	11.1	76.9	12.0	-
Deptford	5429.14	5326.39	7.0	4.8	72.6	13.2	6.3	7.9	10.7	79.1	10.2	-
Knox County	4355.64	4267.13	12.1	8.2	69.4	19.8	4.8	6.0	11.6	73.3	14.3	0.8
Lake Oswego	6359.29	6442.31	10.6	8.8	37.9	37.3	15.3	9.6	2.0	59.1	38.9	-
mean	5415.79		9.9									
Richland Center	4544.94	4625.00	11.7	9.0	82.8	12.9	3.2	1.1	42.4	54.3	3.3	-
Newton	6486.11	6660.72	17.8	14.8	32.1	50.5	14.7	2.8	20.3	52.5	27.1	-
Lake County	3505.66	3535.72	13.1	16.5	70.5	18.0	1.6	9.8	40.0	48.3	11.7	-
Dallas	5730.55	5596.16	11.1	9.7	64.4	29.7	5.9	.0	9.1	69.1	21.8	-
mean	5066.81		13.4									

TABLE 7.21

AMOUNT AND COSTS OF INSTRUCTIONAL OUTPUT FOR 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

School District	Maximum Potential Instruction Hours per Year		Actual Inst. Hours per Year		Non-Inst. Hours per Year		Mean Inst. Minutes per Pupil/day	Mean Non-Inst. Minutes per Pupil/day	Current Operation Expenditure per Pupil Enrolled	Per Pupil Expenditure per Hour of Maximum Potential Instruction	Per Pupil Expenditure per Hour of Actual Instruction
	Per Teacher	Per Pupil	Per Teacher	Per Pupil	Per Teacher	Per Pupil					
Milwaukee	29456.7	1076.0	23013.2	840.6	6443.6	235.4	274	77	$444.98	$.41	$.53
Newark	24543.8	1009.2	23002.2	945.8	1541.6	63.4	292	20	499.92	.50	.53
Memphis	32538.9	1080.0	26508.2	879.8	6030.7	200.2	260	67	244.10	.23	.28
Portland	31002.9	1211.8	24119.2	942.7	6883.7	269.1	314	90	480.98	.40	.51
Appleton	25145.5	931.7	22813.3	845.3	2332.2	86.4	286	30	392.93	.42	.46
Trenton	25097.8	1005.4	21305.0	853.5	3792.8	151.9	278	50	455.42	.45	.53
Johnson City	34225.9	1192.5	25020.7	871.0	9235.2	321.5	292	108	258.70	.22	.30
Salem	29024.6	997.7	24508.8	842.4	4515.8	155.2	287	53	453.50	.45	.54
Merrill	21934.2	955.6	17010.8	741.1	4923.4	214.5	256	74	375.12	.39	.51
Morristown	21734.9	1121.7	16472.0	850.1	5262.9	271.6	277	89	628.16	.56	.74
Tullahoma	31274.8	1111.6	28067.8	997.7	3207.0	114.0	342	39	218.61	.20	.22
Astoria	20818.4	1085.5	18281.2	953.2	2537.2	132.3	313	43	530.45	.49	.56
Cudahy	24301.7	1017.5	22363.5	936.4	1938.2	81.2	307	27	440.31	.43	.47
Bloomfield	21064.3	1003.7	18009.9	858.2	3054.4	145.5	278	47	532.10	.53	.62
Alcoa	26310.9	1045.0	24391.8	973.4	1919.1	76.6	334	26	273.70	.26	.28
Oregon City	23394.0	1000.2	22543.2	963.8	850.8	36.4	321	12	425.10	.43	.44
Preble	24770.6	1013.5	20547.7	840.8	4222.9	172.8	248	58	364.28	.36	.43
Deptford	20590.2	871.8	19628.1	831.1	962.0	40.7	273	13	349.27	.40	.42
Knox County	31489.3	1136.3	27539.3	993.7	3950.0	142.5	337	48	232.90	.20	.23
Lake Oswego	22382.0	946.7	22278.8	942.4	103.1	4.4	314	1	492.79	.52	.52
Richland Center	25308.0	1009.6	22965.2	916.2	2342.8	93.5	316	32	315.19	.31	.34
Newton	18989.9	903.5	17752.5	844.6	1237.4	58.9	283	20	517.76	.57	.61
Lake County	31028.8	1050.0	26779.4	906.2	4249.4	143.8	311	49	182.26	.17	.20
Dallas	22378.1	944.7	20975.5	885.5	1402.5	59.2	300	20	382.92	.41	.43

Salaries

A Friedman analysis of variance by rank of mean salaries produced chi-square = 12.71 among classes of district and chi-square = 14.00 among states. Both these values are significant at the .05 level. An analysis of median salaries produced chi-square values identical to those found for mean salaries. It would appear that mean and median salaries distinguish among classes of district and states.

Experience

A Freidman analysis of variance by rank of mean teacher experience produced chi-square = 9.99 among classes of district and chi-square = 5.40 among states. Neither value is significant at the .05 level. An analysis of median experience produced the same results. Therefore, it would appear that experience of teachers does not distinguish among classes of district and states.

Degrees

A Friedman analysis of variance by ranks of mean degree held by teachers produced chi-square = 11.29 among classes of district and chi-square = 8.40 among states. These values are both significant at the .05 level. It must be concluded that mean degrees held by teachers distinguish among classes of district and states.

Years of Education

No statistical analysis of years of education completed was made. Degrees held by teachers are in part an expression of years of education. This measure was also subject to a great deal of misinterpretation in reporting.

Per-Pupil Expenditures Per Hour of Maximum Potential Instruction

A Friedman analysis of variance by rank of per-pupil expenditures per hour of maximum potential instruction produced chi-square = 3.42 among classes of district and chi-square = 14.00 among states. Therefore, it would appear that per-pupil expenditure per hour of maximum portential instruction does not distinguish among classes of district but does distinguish among states. The latter may be accounted for by the significant difference among states in regard to salaries which comprise a large part of expenditures in all districts and are a major component of per-pupil cost.

Maximum Potential Instructional Hours

A Friedman analysis of variance by ranks of maximum potential instructional hours per year per teacher produced chi-square = 12.42 among classes of district and chi-square = 15.00 among states. Both values are significant at the .05 level. This same measure expressed per pupil provides chi-square = 6.53 and 6.60, respectively, among districts and states. Neither value is significant at the .05 level. It would appear that the significant differences found when this measure is expressed on a per-teacher basis are the result of variations in pupil load per teacher. Apparently maximum potential instructional hours per year distinguish among classes of district and states when expressed on a per teacher basis but not when expressed on a per pupil basis.

Actual Instructional Hours

A Friedman analysis of variance by ranks of actual instructional hours per year per teacher produced chi-square = 5.71 among classes of district and 17.00 among states. There is no significant variance among classes of district but the variance among states is significant at the .05 level. This same measure expressed per pupil produced chi-square = 5.46 and 5.40, respectively. Neither value is significant at the .05 level. Apparently actual instructional hours do not distinguish among classes of district and distinguish among states only when expressed on a per-teacher basis. As with maximum potential instructional hours, the variance must be attributed to the rather consistent difference in pupil load of teachers in the four states.

Non-Instructional Hours

A Friedman analysis of variance by ranks of non-instructional hours per year per teacher produced chi-square = 8.99 among classes of district and chi-square = 2.00 among states. Non-instructional hours per year per pupil produced chi-square = 8.99 among classes of district and chi-square = 1.00 among states. None of these values is significant at the .05 level. When instructional hours per day per pupil were calculated, chi-square = 3.39 among classes of district and chi-square = 6.60 among states. Neither of these values is significant at the .05 level. Thus, it would appear that non-instructional hours do not distinguish among classes of district or among states.

Non-Instructional Certificated Staff

Non-instructional certificated staff personnel include administrators, supervisors, counselors, special service personnel, and other professional staff members not directly connected with the formal instruction of pupils. This classification includes both individual school and central office personnel. Analyses were made of salaries, experience, years of school completed, degrees held, and pupils per non-instructional certificated staff member. Mean and median salaries and mean and median years of experience were calculated for each district. Years of education was expressed as the percent of staff in each district having 16 years or less, 17, 18, or 19 or more years of training. Highest degree held was expressed as the percent of staff members having no degree, bachelor's, master's, professional certificate (6th year), or doctor's degrees. Number of pupils per non-instructional certificated staff member was found by dividing the reported enrollment of each district by the total number of non-instructional certificated staff members reported. The data are presented in Table 7.22.

Salaries

A Friedman analysis of variance by ranks of mean salaries produced chi-square = 14.00 among states and chi-square = 4.30 among classes of

TABLE 7.22

SALARY, EXPERIENCE, YEARS OF EDUCATION, DEGREES HELD, AND PUPILS PER NON-INSTRUCTIONAL STAFF IN 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

City	Salary		Experience		Years of School (%)[a]				Degrees Held (%)					Pupils per Non-Inst. S
	X	Median	X	Med.	1	2	3	4	1	2	3	4	5	
					Large Cities									
Portland	$9,850	$ 9,700	20.5	19.8	2.7	33.3	20.0	44.0	1.3	9.3	68.0	0.0	20.1	367.1
Memphis	7,615	7,750	23.5	25.5	4.5	68.3	22.7	4.5	0.0	18.2	81.8	0.0	0.0	387.0
Newark	9,465	9,374	21.1	21.5	11.9	14.3	19.8	50.0	6.3	10.3	69.0	1.7	10.3	256.1
Milwaukee	8,955	9,005	19.6	18.7	8.5[b]	42.5	19.1	29.9	0[b]	12.8	87.2	0.0	0.0	211.2
					Medium Cities									
Salem	9,300	9,600	22.9	21.5	8.2	27.9	39.3	24.6	0.0	13.1	78.7	1.6	6.6	313.3
Johnson City	7,185	7,250	27.6	29.0	0.0	81.3	18.7	0.0	0.0	6.3	93.7	0.0	0.0	405.8
Trenton	9,570	9,354	25.0	24.4	0.0	18.4	22.4	53.1	0.0	14.3	79.6	0.0	4.1	333.1
Appleton	7,645	7,600	18.8	16.0	22.0	48.0	22.0	8.0	0.0	28.0	72.0	0.0	0.0	190.0
					Small Cities									
Astoria	8,640	8,250	14.8	12.4	0.0	26.7	40.0	33.3	0.0	13.3	86.7	0.0	0.0	135.5
Tullahoma	6,470	6,200	28.5	29.5	0.0	60.0	30.0	10.0	0.0	10.0	90.0	0.0	0.0	357.3
Morristown	9,750	10,124	16.0	12.6	4.8	9.6	28.6	52.2	4.8	0.0	85.6	0.0	9.6	168.9
Merrill	7,920	7,250	19.0	25.0	0.0	33.3	55.6	0.0	0.0	33.3	66.7	0.0	0.0	334.1
					Established Suburbs									
Oregon City	8,315	7,875	16.5	14.5	5.9	52.9	23.5	17.7	0.0	11.8	70.5	5.9	5.9	229.8
Alcoa	5,464	5,750	11.4	6.1	28.6	42.8	0.0	28.6	0.0	42.8	57.2	0.0	0.0	247.0
Bloomfield	9,908	9,874	21.6	20.5	0.0	20.0	14.3	65.7	0.0	2.9	77.1	5.8	14.2	223.7
Cudahy	9,750	9,250	29.0	30.0	0.0	40.0	20.0	20.0	0.0	0.0	90.0	0.0	0.0	305.7
					Developing Suburbs									
Lake Oswego	9,450	9,250	14.3	13.5	0.0	43.8	18.8	37.4	0.0	0.0	93.7	0.0	6.3	271.9
Knox County	5,915	5,875	18.3	18.0	6.7	63.3	13.3	16.7	0.0	33.3	63.3	0.0	3.4	225.4
Deptford	8,270	7,915	10.7	11.0	0.0	33.3	33.3	33.4	0.0	0.0	100.0	0.0	0.0	740.0
Preble	7,464	7,250	15.6	17.0	22.3	44.4	33.3	0.0	0.0	33.3	66.7	0.0	0.0	315.0
					Agricultural Service Centers									
Dallas	8,437	8,000	11.8	13.0	12.5	62.5	25.0	0.0	0.0	0.0	100.0	0.0	0.0	335.0
Lake County	5,150	5,250	21.3	23.0	50.0	33.3	0.0	16.7	0.0	66.6	16.7	0.0	0.0	384.2
Newton	9,450	8,830	23.3	22.0	0.0	20.0	20.0	50.0	0.0	0.0	90.0	0.0	10.0	224.9
Richland Center	9,417	8,750	27.7	34.0	0.0	33.3	33.3	33.4	0.0	0.0	100.0	0.0	0.0	752.0

[a] May not total 100 because of non-recorded data.

[b] Building level only.

district. At the .05 level this value is significant for variance among states but is not significant for variance among classes of district. Therefore, it would appear that mean salaries distinguish among states but do not distinguish among classes of district.

Experience

A Friedman analysis of variance by ranks of mean experience of non-instructional certificated staff members produced chi-square = 4.20 among states and chi-square = 7.00 among classes of district. Neither value is significant at the .05 level. Apparently mean experience of non-instructional certificated staff members does not distinguish among states or classes of district.

Years of Education

No statistical analysis was made of years of formal education completed. From visual inspection of the data it was apparent that different interpretations of a "year of school" had been made.

Degrees

A Friedman analysis of variance by ranks of percent of non-instructional certificated staff members with a master's degree or more produced chi-square = 2.50 among states and chi-square = 2.10 among classes of district. Neither value is significant at the .05 level. Hence it appears that percent of non-instructional staff members having a master's degree or more does not distinguish among states or among classes of district.

Pupils Per Non-Instructional Certificated Staff Member

A Friedman analysis of variance by ranks of the number of pupils per non-instructional staff member produced chi-square = 3.40 among states and chi-square = 5.30 among classes of district. Neither value is significant at the .05 level. Therefore, it would appear that numbers of pupils per non-instructional staff member does not distinguish among states or among classes of district.

Non-Certificated Personnel

Non-certificated personnel was defined to include secretarial, custodial, health, and food service employees and all other employees of the district who are not required to hold a teacher's certificate. The form designed for gathering this information was apparently inadequate to accommodate the wide variety of such personnel. Consequently, the inconsistency and incompleteness of the data precluded a meaningful analysis.

District-Owned Property

Information regarding type of school property, size of site, number of pupils currently housed, and amount of insurance carried was requested. As important as property insurance data may be to businesses and individuals, there seems no consistent method of recording this information either by class of district or by state. The use of "blanket" policies in many instances made meaningful analyses impossible. As a result, little useful information on the value of school buildings could be obtained for all school districts. The size of the school site and number of pupils currently housed are directly comparable in all districts studied. When the standards for school site size established by the National Council on School House Construction[3] were employed as a criterion, only two of the 71 senior high school sites, one of the 56 junior high school sites, and 56 of the 552 elementary school sites were found to be adequate. Thus, of the total of 679 sites, only 8.7 percent met N. C. S. H. C. standards.

A percentage frequency distribution of size of school sites grouped by class of district is summarized in Table 7.23.

TABLE 7.23

SIZE OF SCHOOL SITES BY CLASS OF DISTRICT
FOR 24 SCHOOL DISTRICTS IN FOUR STATES, 1962-63

Class[a] of District	Senior and Junior High Sites				Elementary Sites			
	No. of Sites	Percent 10 acres or less	Percent 11-20 acres	Percent 21 acres or more	No. of Sites	Percent 6 acres or less	Percent 7-12 acres	Percent 13 acres or more
LC	75	69.3	22.7	7.9	302	79.1	18.2	2.7
MC	22	50.0	36.4	13.6	75	84.0	16.0	0
SC	6	33.3	33.4	33.3	21	47.6	33.3	19.0
DS	12	24.9	33.2	41.8	38	68.4	26.4	5.2
ES	7	42.9	28.6	28.5	84	76.2	16.7	7.1
ASC	5	20.0	40.0	40.0	37	86.5	8.1	5.4

[a] School district code: LC = Large city
MC = Medium city
SC = Small city
DS = Developing suburb
ES = Established suburb
ASC = Agricultural service center

Because the number of sites in some classes of district is quite small, few generalizations can be made. It would seem, however, that there is a tendency for large cities to have a greater percentage of small high school sites and for agricultural service centers to have a greater percentage of large high school sites. However, agricultural service centers have a greater percentage of small elementary school sites. This may be accounted for by the number of one-room school sites in two of the agricultural service centers included in the sample.

Private Costs of Public School Programs

The claim that public education is "free" has been challenged by studies of actual out-of-pocket expenditures of parents and pupils. In a recent study of private costs of secondary education in Wisconsin[4] a "typical" student is estimated to spend between $125 and $150 per year, while a graduating senior will spend nearer $200 during the school year. In recognition of this circumstance, the 24 school districts were asked to report estimates of average per-pupil private costs per year.

Data were requested for 60 items frequently found in school programs but covered only partly or not at all by public funds. The following information was sought: whether the cost to the pupil was required or voluntary, the number of pupils participaing, and the average cost to pupils per year by grade levels (K-6, 7, 8, and 9 or 10-12). In the tabulation of replies, no distinction was made between required and voluntary costs, since the latter are "required" in the sense that they must be paid if the child electe to participate in the activity. Private costs were treated separately for elementary school pupils (grades K-6) and for high school pupils (grades 7-12). The 60 items for which private costs were reported were placed in four categories: activity costs (23 items), fees and use charges (23 items), social costs (8 items), and personal costs (6 items). A school district was recorded as reporting a private cost for a program item if any pupils were shown incurring private costs for the item on one or more school reports in the district.

Categories of Cost

The frequencies for program items were summed by the four categories for each of the six classes of district. The ratios of these sums to all possible positive responses for each classification were expressed as percents and the percentages ranked by classes of district and by states. A Friedman analysis of variance by ranks of frequency of private pupil costs reported for program items in each of four categories produced chi-square values as shown in Table 7.24.

TABLE 7.24

CHI-SQUARE VALUES OF CATEGORIES OF EXPENSE BY CLASSES OF DISTRICT AND STATES

Category Program Items	Chi-Square Values for Ranks			
	High School Pupil Costs		Elementary School Pupil Costs	
	Class of School District	State	Class of School District	State
Activity Costs	8.39	3.30	3.00	4.65
Fees and Use Charges	8.86	11.40	3.47	7.15
Social Costs	7.25	0.90	6.50	1.65
Personal Costs	4.54	3.95	7.22	2.25
All Costs	10.11	5.40	3.79	2.35

As shown above, only fees and use charges ranked by states was found to be significant at the .05 level. Thus the classes of district cannot be distinguished by the frequency of reported private costs to pupils, either high school or elementary.

Amount of Cost

Analysis of the amount of reported costs involved calculating the district average cost to pupils per year for each program item. Some schools did not report the number of pupils participating in a program. In these cases, the costs reported were not included in the district averages where other schools reported full information. Where no school within a district reported full information for the given item, the costs reported were used to calculate a district average by assuming equal numbers of participating pupils for each report. No distinction was made in the statistical analysis between the two averages. Program items for which no private costs were reported were recorded as zero. Average costs reported by school district for elementary and high school pupils were ranked by classes of district and by states. A Friedman analysis of variance by ranks of average amount of private costs to pupils for individual program items produced chi-square values shown in Table 7.25.

Only the costs of dances to high school pupils ranked by classes of district was found significant at the .05 level. Differences among states were found to be significant at the .05 level for costs of insurance to elementary school pupils, and for high school pupils costs of acticity cards, class rings, graduation announcements, insurance, industrial arts and textbook fees, costs to cheerleaders, and towel service charges. Thus it would appear that the cost of dances to high school pupils is the only individual program item that distinguishes among classes of district. Standing alone, this item appears to be tenuous grounds for differentiating state financial support.

TABLE 7.25

CHI-SQUARE VALUES FOR COSTS TO ELEMENTARY AND HIGH SCHOOL PUPILS FOR PROGRAM ITEMS RANKED BY CLASSES OF SCHOOL DISTRICT AND BY STATES

Program Items	Chi-Square Values for Ranks By			
	Elementary School Pupils		High School Pupils	
	Classes of School District	States	Classes of School District	States
Activity Costs:				
1. Activity Card	n[a]	n	3.82	10.80
2. Basketball Game Admission Charge	n	n	3.82	4.25
3. Football Game A.C.	n	n	3.18	3.75
4. Other Athletic A.C.	n	n	3.47	3.45
5. Plays A.C.	n	n	7.04	1.25
6. Concerts A.C.	n	n	10.11	4.35
7. Misc. Events A.C.	n	n	n	n
8. School-wide Organization Dues	n	n	1.29	1.40
9. Athletic Participation	1.86	1.15	2.57	5.20
10. Cheerleading	n	n	2.93	10.34
11. Curricular Related Organizations	n	n	3.89	7.15
12. Class Dues	n	n	4.47	0.15
13. Field Trips	5.57	2.40	6.57	3.80
14. Cap and Gown	n	n	7.22	1.70
15. Band Instruments	1.14	0.65	2.64	3.15
16. Band Uniforms	n	n	1.54	3.75
17. Band Music & Supplies	n	n	9.86	3.85
18. Choral Uniforms	n	n	n	n
19. Choral Music and Supplies	n	n	n	n
20. Newspaper	n	n	7.25	n
21. Handbook	n	n	4.75	n
22. Yearbook	n	n	2.18	0.80
23. Magazine	n	n	n	n
Fees and Use Charges:				
24. Kindergarten	n	n	n	n
25. Grade 1	1.68	7.20	n	n
26. Grade 2	1.68	7.20	n	n
27. Grade 3	1.39	6.20	n	n
28. Grade 4	1.54	6.20	n	n
29. Grade 5	2.11	6.20	n	n
30. Grade 6	1.82	6.20	n	n
31. Grade 7	n	n	1.50	4.35
32. Grade 8	n	n	1.43	4.05
33. Art	n	n	4.43	5.15
34. Business Education	n	n	3.07	3.05
35. English	n	n	5.36	1.05

TABLE 7.25 (cont'd.)

CHI-SQUARE VALUES FOR COSTS TO ELEMENTARY AND HIGH SCHOOL PUPILS FOR PROGRAM ITEMS RANKED BY CLASSES OF SCHOOL DISTRICT AND BY STATES

	Chi-Square Values for Ranks By			
	Elementary School Pupils		High School Pupils	
Program Items	Classes of School District	States	Classes of School District	States
Fees and Use Charges:				
36. Foreign Languages	n	n	0.89	0.80
37. Homemaking	n	n	5.82	4.35
38. Industrial Arts	n	n	4.04	9.80
39. Math	n	n	n	n
40. Physical Education	n	n	3.50	6.65
41. Science	n	n	5.22	2.90
42. Social Studies	n	n	2.47	1.85
43. Special Education	n	n	n	n
44. Textbooks	n	n	3.97	10.53
45. Lockers	n	n	9.61	5.85
46. Towel Service	n	n	3.50	11.70
Social Costs:				
47. Dances	n	n	11.75	5.00
48. Donations	7.47	2.55	8.11	1.15
49. Class Rings	n	n	3.75	8.40
50. Graduation Announcements	n	n	1.47	8.45
51. Class Gift	n	n	7.86	2.65
52. Graduation Flowers	n	n	3.04	1.35
53. Photos	n	n	5.07	1.55
54. Sales and Benefits	n	n	4.00	1.65
Personal Costs:				
55. Medical Exams	n	n	n	n
56. Milk	n	n	2.11	2.15
57. Lunch	10.00	4.55	9.86	1.05
58. Insurance	4.00	7.85	6.32	8.15
59. Transportation	n	n	6.11	2.75
60. Fines	n	n	0.93	5.25

[a]n - negligible

Notes to Chapter VII

1. George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Company, 1959), p. 272.

2. National Education Association, Financing the Public Schools, 1960-1970 (Washington, D. C., 1962), p. 36 and 38.

3. Wallace H. Strevel and Arvid J. Burke, Administration of the School Building Program (New York: McGraw-Hill Book Company, 1959), p. 240.
   Elementary schools--minimum of five acres plus one additional acre for each 100 pupils;
   Junior high school--minimum of 20 acres plus one additional acre for each 100 pupils;
   Senior high schools--minimum of 30 acres plus one additional acre for each 100 pupils.

4. J. A. Fortney, Private Costs of Public Secondary Education in Wisconsin (The University of Wisconsin, Madison, Wisconsin: Cooperative Educational Research and Services, 1962), p. 20.

CHAPTER VIII

CONCLUSIONS AND IMPLICATIONS FOR STATE SUPPORT

State support programs have the stated or implied objective of guaranteeing equal opportunity for all children of the state, according to their ability and without regard to their location, station in society, or the wealth of the district in which they reside. This is part of the American democratic ideal. State support programs also imply an effort towards equating financial burdens among taxpayers for the support of public educational enterprises. Yet, great inequality in the opportunities available to youngsters, and tax inequities to their parents and other taxpayers, continue to exist in most states; this in spite of the fact that equalization was closer to reality in 1960 than ever before.

The research reported in this study relates to the equalization of educational opportunities and educational costs. The conclusions of the study set forth below attempt to answer the following specific questions:

1. What impact do state support programs have on public finance at the local (school district, municipal and county) level?
2. Have fiscal capacity and educational responsibility of school districts been adequately measured?
3. Can factors be identified and relationships among variables be described which will suggest a formula for the state support program that will achieve the objectives of equality of educational opportunity and equalization of financial burden?

Review of Literature

A review of the literature leads to the following conclusions:

1. The objectives of state support have been well considered and clearly formulated, although more frequently from a philosophical than a research viewpoint.
2. The limited research on school finance programs often shows effects of state support at variance with its stated objectives.
3. Changes based on research have been implemented slowly.
4. Many excellent individual research studies have been made in the area of state support of education but there has been no coordinated attack on school finance problems as a whole.
5. When state support programs appear to have merit, they too frequently are adopted without research and analytical testing of the assumptions upon which they are built.

6. No clearly stated theory of educational finance is available for testing, and research in educational finance is largely fragmented and unrelated to a body of theory.

7. The literature demonstrates that, with few notable exceptions, the financing of the local educational enterprise has been considered in isolation from the financing of the local governmental enterprise. However, it is obvious that both enterprises serve the same population, utilize the same tax bases, and frequently compete for the same limited tax dollars.

Impact of Wisconsin State Support

A study was made in one state of the impact over time of change in state support on local public finance. Expenditures for education were found to more closely parallel economic conditions, particularly in times of depression, than do municipal expenditures. During the upturn of the business cycle a lag between increased expenditures for education and improved economic property. is evident. This finding lends support to the view that the financing of local educational and governmental enterprises must be considered in totality if both are to be related equally to changing economic conditions.

The analysis revealed that state support may serve to (1) substitute for local effort, (2) supplement local effort, and (3) stimulate local effort. This finding implies that the objectives of state support programs must be explicitly incorporated in the operational design of the formula.

Relationships Among Variables Measuring Fiscal Capacity and Educational Responsibility

Factor analysis procedures were used to process 161 variables describing 104 Wisconsin school districts in an attempt to develop a "profile" of educational climate. The anticipated fiscal capacity-educational responsibility dichotomy was not clearly defined by the clustering of variables in the factor analysis. However, the relationships among variables revealed through the clustering procedure were taken into account in the development of the hypothetical state support model. The multiplicity of factors extracted by factor analysis indicates the complexity of an educational climate. However, the following conclusions seem warranted by the results of factor analysis:

1. No single measure of wealth currently in use is adequate to describe fully the ability of a community to support public services (including education).

   At least eight factors clearly indicate problems such as the following:

   a. Corporate income tax paid is unrelated to measures of wealth other than equalized valuation of manufacturing property.

   b. Equalized valuation of residential, mercantile, manufacturing, and agricultural properties differ widely in their correlation with total equalized valuation, and with personal and corporate income taxes paid. Agricultural property is singled out in two factors as essentially unrelated to other measures of wealth.

2. Personal income tax paid is the most adequate of the present measures of wealth available from public records.

   The two factors which provide the most comprehensive profile of school district wealth have their highest correlation with personal income tax paid. Effective buying income (available nationally from estimates by Sales Management, "Survey of Buying Power") and equalized valuation of residential property were also found to have high correlations with these two factors.

3. Relative community wealth and local school support are not related to size of population.

4. Municipal support is essentially unrelated to measures of wealth.

   Ten factors describing municipal receipts and disbursements had no significant correlation with either equalized valuation or with personal or corporate income taxes paid.

5. State school support is inversely related to measures of wealth.

   Two factors clearly indicate that the equalization function of the Wisconsin state support program is operating, but that poorer districts are still at a relative financial disadvantage.

6. Municipal support and local school support tend to be unrelated or inversely related to each other.

   Two factors clearly show an inverse relationship, six factors indicate no relationship, and six factors show slight positive relationships or relationships which are not clear.

7. The educational responsibility of a community cannot be assessed in clear-cut fashion utilizing such simple measures as population, numbers of staff, or average daily membership of pupils.

   Fifty-nine factors were isolated which describe the educational responsibilities of school districts. These factors, although for the most part quite specific, may be classified as follows:

   a. Pupil/teacher/administrator ratios are described by five factors. The need factor accounting for the largest percent of the total variance of the 62 need variables falls within this group.

   b. The character of the student body is described by eight factors associated with such items as type of higher education pursued by graduates, dropout rate, pupil mobility, and academic ability of the student body (singled out by two factors, one of which accounts for nearly six percent of the variance of the 62 need variables).

c. Number of students is described by four factors related to average daily membership, non-public school enrollment, and non-resident average daily membership.

d. Special services such as transportation and school libraries are described by six factors.

e. The character of the teaching staff, including experience and salary, is described by five factors.

f. Subject areas of the high school curriculum are described by 14 factors which include such specific aspects as percent of students enrolled in mathematics, English, social studies, and physical education, as well as size of classes in those subjects.

g. Programs of special education are described by seven factors. Three factors indicate a positive relationship between these programs and the size of the school district.

h. The character of the school district population is described by three factors, two of which deal with mobility of population.

8. The educational responsibilities of a community must be financed through a program of support related to, but not limited by, the fiscal capacity of the district.

Seventeen factors relating educational responsibility to fiscal capacity grouped as follows:

a. No relationship was found between various specific aspects of the educational program and measures of wealth and/or community characteristics in 10 factors. One of these factors (accounting for 6.5 percent of the variance of the 70 combined variables) describes class size but shows no relationship with school district wealth.

b. Aspects of urbanity, suburbanity, and rurality are described by six factors which related these aspects to population growth rates, transportation needs and lunch programs.

c. One factor (A-3) presents a rather comprehensive profile of school district wealth and in itself illustrates the complex nature of the educational climate. This factor had statistically significant correlation with 42 variables and accounted for 11.8 percent of the variance of the 70 combined variables. The factor describes fiscal capacity of the school district by reference to personal income tax paid and equalized valuation of residential property, both of which were highly correlated with the factor. Lack of high correlations between this factor and municipal receipts or disbursements is striking. Curricular areas of fine arts, foreign languages, and mathematics (college preparatory subjects generally) are correlated positively and vocational subjects are correlated negatively with the factor. Equalized valuation of residential, mercantile, manufacturing, and agricultural property differ widely in their correlations with this factor. Municipal tax rates correlate negatively with the factor while school tax rates correlate positively. School district revenue from local sources is related positively to the factor while revenue from federal and state sources is inversely related. Factor A-3 is associated with high academic ability of pupils, fewer dropouts, lower teacher-pupil ratios, more experienced teachers, higher average salary, higher level of educational attainment of the adult population, and higher expenditures for pupil health and recreation programs.

9. Enrollment in non-public elementary and secondary schools is negatively correlated with school tax rate on equalized valuation and with receipts per pupil from state sources. However, it has no significant correlation with expenditure per pupil for current operation of the public schools.

10. Dropouts in grades 9-12 correlates positively with percent of teachers having less than four years of professional preparation and correlates negatively with mean teacher salary.
No significant correlation was found between dropout and academic ability of the student body, average size of high school classes or percents of enrollment in various high school subjects.

11. Many elements of education and educational finance are distinctive. They do not appear to be related to other variables or factors in a consistent manner. A large number of such elements have been used to justify state support; yet, they are uncorrelated or negatively correlated with state support. These include such items as qualifications of teachers and pupil-teacher ratios. Receipts per pupil from state sources do not correlate to an appreciable extent with variables normally assumed to be related to the quality of the educational program.

Discriminant analysis of these data forced the conclusion that the 104 districts were not representative of the same population. However, neither were the six classes of district proven to be homogeneous. This finding implies that one must choose between developing a hypothetical state support model which deals uniquely with each school district, or of identifying characteristics of all possible classes of district and developing appropriate state support models for each. While the six classes of district developed by the investigators distinguish among districts as well as, if not better than, eight classes modeled after Brazer's classification of cities, further study is required to determine if there exist a unique set of characteristics which will distinguish among districts with precision. Analysis of data from 24 districts in four states did not succeed in isolating a comprehensive set of such characteristics.

In summary, while the state support program studied has tended to equalize educational opportunities, the data clearly indicate (1) the isolation of education from other municipal service responsibilities, (2) a failure to recognize the inadequacies of present measures of the fiscal capacity of communities, and (3) a tendency to ignore the complex nature of, and interrelations within, the educational responsibility of a community.

Impact of Four State Support Programs

After examining in some detail state support programs in New Jersey, Oregon, Tennessee, and Wisconsin, the amount of state support which each of the 24 districts would receive under each of the four formulas was calculated. On the basis of this analysis the following conclusions can be drawn:

1. Each program provides for equalization of the financial burden of school support, but not to the same degree.
2. Each district in the state will receive some state aid under all formulas thereby providing local school districts with revenue that can be substituted for local tax effort.
3. The Tennessee and Wisconsin formulas provide greater incentive for local effort in support of the public schools than do those of New Jersey and Oregon.
4. No statistically significant difference was found among the dollar amounts received by each district under the four formulas.

Operational Differences

Data obtained from 24 districts in four states were analyzed to identify operational similarities and differences among classes of district and states. Some of the conclusions drawn from this analysis are:

1. Municipal finance and school finance are unrelated under present state support programs. If equity for the taxpayer is a goal of state support, relationships between the support of municipal and educational services must be considered.
2. Substantial variations exist in tax rates for school purposes among the districts of the same state. True equalization is far from a reality when measured in terms of pupil instructional time, pupil expenditures, or local tax rates for either educational or other purposes.
3. Most of the operational differences among districts which could be analyzed statistically were found to be randomly distributed throughout the six classes. This implies that local decisions determine many aspects of the educational program of a district. Only the following operational differences among classes of district were significant: per pupil budget allocation to administration, number of minutes per day in grades 10-12, mean and median teachers' salaries, mean degree held by teachers, maximum potential instructional hours per teacher, and cost of dances

to high school pupils. This set of characteristics does not appear sufficiently comprehensive for basing state support models which differentiate among classes of district. This implies that a state support model must deal uniquely with each school district.

CHAPTER IX

HYPOTHETICAL MODEL FOR STATE SUPPORT

It is axiomatic that education must continue to improve. Thus, it is essential that a hypothetical state support model provide the means and incentive to improve quality, increase efficiency and productivity, and encourage the prudent use of funds. It must also provide a sound and equitable system of financing education which equalizes both educational costs and opportunities. These requirements are recognized in the hypothetical model.

The several phases of the study reported in previous chapters have provided direction for the development of a hypothetical state support model. The present chapter contains a description of the hypothetical model proposed, and demonstrates its application in the six Wisconsin school districts studied in detail in Phase II of the study.

Recommendations for the Hypothetical Model

1. The relationships among school, municipal, and county finance should be recognized. Since some relationship between school finance and municipal and county finance appears desirable, provisions to achieve this relationship should be incorporated in the hypothetical model if tax rates are to be equalized for the taxpayer. Educational leaders are advocating that this be done.[1]

2. Educational responsibility should be described in terms of a "priced program" which emphasizes quality, productivity, and efficiency. Since educational responsibility or need is not reflected in a single factor, but a combination of elements appearing in many factors, it is recommended that the educational responsibility of a district be described in terms of a "priced program" which would be the amount of money necessary to provide high quality, efficiently-operated educational programs, using commensurate methods, procedures, and equipment. The priced program concept would permit adjustments of peculiarities that might be found to exist among districts. For example, if some districts must pay teachers higher salaries to secure the same caliber of teacher, this condition can be recognized in the price of the program. If the length of term in grades 10-12 needs adjustment, it can be done in the priced program. The priced program incorporates the concept of "effective operational services." Innovations which would increase the productivity of educational and other public services would be incorporated. Participation in the program would require adherence to practices which yield maximum economy in purchase of goods, operation of buses, determination of insurance coverage, etc. It would require establishment of the most economical governmental units at all levels and elimination of units not geared to high productivity and efficiency. The priced program for the

municipalities would be determined by the method deemed appropriate by the state.

The program of each school district would be priced by the local district board which would be required to provide a description of the program to the state educational agency for review and approval. In the initial stages it is proposed that the cost of the actual program be submitted. It would be adjusted upward for items needed to achieve quality and be adjusted downward for services which could be reduced in price or eliminated without reduction in quality. The state educational agency would be required to describe the educational adjustments to be made by the local school district in order to receive state support. Districts would be permitted to spend more but not less than the priced program recommended by the state educational agency without the loss of state support. This provision rests on the rationale that education is important to the welfare and productivity of the entire state. The assurance of educational quality becomes, then, a state concern. However, the pattern for providing educational quality remains a function of the local district in the hypothetical model, even though the literature indicates that "some concepts of local control may need re-interpretation."[2]

3. The model should incorporate the best available measure of fiscal capacity. Since wealth or income flow is not reflected in a solitary factor, several alternatives for the measurement of fiscal capacity will be used in the hypothetical model. Factor analysis demonstrated that fiscal capacity cannot accurately be measured, as is commonly attempted, by the single variable of equalized valuation of property if an equitable relationship to income in all classes of district is to be achieved. If fiscal capacity of individual school districts were impossible to measure by any acceptable means, a state support model could be developed which would not require its measurement. This may take many forms, three of which are the following:

   a. the entire cost of the educational program at any given level of quality could be supported by the state

   b. a percent of the priced program of educational responsibility could be paid by the state without regard to the fiscal capacity of the district

   c. state support payments could be provided for specific program features; i.e., for qualifications of staff, courses offered, etc.

   While such programs are possible, they have limited utility in terms of acceptance and/or adequacy in equalization of costs and educational programs. Thus, it is recommended that the hypothetical model make use of several alternative measures of fiscal capacity of school districts with final determination of the best measure to be made only after further study.

4. Desirable special cost features must not be discouraged. Special cost features of the program, such as experiments and classes for

handicapped pupils, may be covered in either of two ways:

a. include the cost of such features in the priced program

b. provide separate support for these features over and above the priced program.

At stake here is the prevailing philosophy in the state. However, an active role in stimulating such features is implied in either approach.

5. The same relative level of local effort should produce equivalent educational programs in all districts. It should be possible for the poorest districts to have the same level of educational quality as the richest districts with the same relative local level of fiscal effort. In this concept the poorest districts should be able to become "lighthouse" districts with the local financial effort required in the wealthiest districts of the state. Provisions directed toward this objective are incorporated in the hypothetical model.

6. Incorporation of private and parochial school costs (while not recommended) should be possible. If a state desired, the cost of all or part of the education of children in private and parochial schools could be included in calculation of the priced program representing the educational responsibility of a district. The hypothetical model formulated will permit the inclusion of any part of the cost of privately-supported education in the priced program of a community. However, districts with high private and parochial enrollments generally have lower school tax rates on equalized valuation. It is recommended that none of the costs of private or parochial schools be included in the hypothetical state support formula until more definitive data on combined public and private school obligations and their tax impact are available.

Formula for the Hypothetical Model

The hypothetical model presented below has been designed to recognize concepts developed in all parts of the study and to embody the above recommendations. Two major problems were immediately encountered. The first arose from the fact that the discriminant analysis showed the different classes of school district to be significantly different when variables related to educational responsibility and fiscal capacity were used as measures, either individually or in combination. The question arose whether or not several state support models were demanded for the different classes of district. If all measures of fiscal capacity and educational responsibility as described in the discriminant analysis were employed as a basis for computing the state support, several models would be indicated in spite of the difficulty of achieving equity among districts supported by different models. However, if one variable (income tax paid, equalized valuation of property, or effective buying income) is used to measure fiscal capacity, the recommended use of one model for all classes of districts is feasible. Using net personal income tax as the measure of fiscal capacity assumes that $100 of net personal income tax paid represents the same relative ability to purchase $100 worth of the priced program in all districts.

The second problem is that the criterion of equity requires that the proposed model be designed to serve the equalization purpose only and is essentially a "small fund" state support program; i.e., when school districts, municipalities, and counties have fiscal capacity at average or above average for the state in relation to their service responsibilities, they receive no state support. This program of state support is unsatisfactory for most states since state support is granted to virtually all districts and serves many purposes in addition to equalization; e.g., local property tax relief, support of educational improvement, support of special programs and services, etc. A number of states may desire to make very substantial payments to all districts as a percent of the priced program or on some other basis. To adjust to various state support payments, the hypothetical model is designed to accommodate state payment of any percent of the priced program or other types of payment the state decides to provide over and above the equalization payments. This percent of total cost or other payments will be subtracted before the equalization support is calculated. If the state pays 100 percent of the cost of education on a percent of cost or flat aid basis, no computation will be needed to determine equalization aid for schools.

Within the foregoing framework the following state support formula is proposed:

$$\text{State Support} = \left(1.00 - \frac{FC_D}{SR_D}\right) \times PP_D$$

where

FC_D = fiscal capacity of the district expressed as a percent of the state total
SR_D = service responsibility of the district including those of the county and municipality expressed as a percent of the state total
PP_D = the priced program of the district including county, municipal, and educational services.

For example, if for a given district the fiscal capacity is six percent of the state's total, the service responsibility is eight percent of the state's total for county, municipal, and school purposes, and the cost of the priced program is $1,000,000, the formula would operate as follows:

$$\text{State Support} = \left(1.00 - \frac{6}{8}\right) \times \$1{,}000{,}000 \quad \$250{,}000$$

The priced program would include not only the cost of all education, but the cost of municipal functions and the functions of the county supported by the territory within the municipality and school district. The example assumes the boundaries of the school district and municipality are coterminous. However, the model can be adapted to other circumstances as indicated later. While the amount of state support is calculated on the priced program, it is not required that the amount determined in the priced program be spent. It is recommended that the county and municipality be permitted to spend more or less than the priced program. The rationale for this recommendation is that, above certain minimum standards, activities of municipalities and counties are essentially "home-rule" functions. Municipalities and counties have enjoyed a high degree of local autonomy and it is recommended that this be continued. It should be recognized that communities spending less than the priced program will enjoy a lower tax responsibility. This is important in rural areas where many services are supported privately or are not provided. If counties, municipalities, or schools spend more than the priced program, any excess expenditure must be paid entirely from local sources.

The service responsibility of each district may be calculated as follows:

Service Responsibility = $(M_p - M_r) \div (C_p - C_r) \div (E_p - E_r)$

where:

M_p = priced program of the municipality within the school district
M_r = all revenue receipts of the municipality within the school district including shared taxes, grants-in-aid, etc.
C_p = priced program for the county's share within the school district
C_r = all revenue receipts of the county within the school district including shared taxes, grants-in-aid, etc.
E_p = priced program for education in the school district
E_r = all revenue receipts of the school district including shared taxes, grants-in-aid, etc.

It is understood that no part of the equalization support calculated under the hypothetical model is to be subtracted in the above calculations. The service responsibility of each area is first calculated in dollars to permit the deductions; it is then expressed as a percent of the state's total. Fiscal capacity is also expressed in dollars in the hypothetical model, although this is unnecessary for districts receiving state support. For determination of state support, only the percent of fiscal capacity of the state in each district needs to be ascertained. If the district has greater fiscal capacity than service responsibility, it is recommended that the district be assigned financial obligation to a state equalization fund.

To calculate the assigned financial obligation, the amount of fiscal capacity required to support the local priced program is calculated. This in essence is done to equate fiscal capacity and service responsibility. If the district has five percent of the state's service responsibility and six percent of the state's fiscal capacity, then five-sixths of the fiscal capacity would be required to support the priced program of the district. The other one-sixth of the district's fiscal capacity is then available to support the state equalization program. The obligation of each district whose fiscal capacity exceeds its service responsibility is computed as follows:

1. the excess of fiscal capacity over service responsibility is calculated in dollars
2. the dollar excess for all districts is totaled for the state
3. the total state equalization support required is determined
4. the rate required on the excess fiscal capacity to produce the needed state equalization support is then calculated (step 2 divided by step 3)
5. the calculated rate is applied to the excess capacity of each district.

The formula for determining the obligation of districts with excess fiscal capacity is:

$$\text{Obligation} = \frac{EFC_D}{FC_D} \times \$FC_D \times ASR_E \quad \text{and,} \quad ASR_E = \frac{EMR_s}{EFC_s}$$

where:

EFC_D = excess of fiscal capacity over amount needed for priced program as percent of state total
FC_D = fiscal capacity of the district as percent of the state total
$\$FC_D$ = fiscal capacity of district expressed as dollars
ASR_E = average state rate required on the excess fiscal capacity to produce money required to pay state equalization support
EMR_s = equalization money required (state total)
EFC_s = excess fiscal capacity (state total).

The application of this formula is shown below in a district where:

FC_D = six percent of state total
SR_D = five percent of state total
$\$FC_D = \$6,000,000$
$EMR_s = \$20,000,000$
$EFC_s = \$200,000,000$
$ASR_E = \frac{EMR_s}{EFC_s} = .1$

$$\text{Obligation} = \frac{6-5}{6} \times \$6,000,000 \times .1 = \$100,000 \text{ (Equalization money paid by district to state)}$$

It is assumed that the application of the average state rate on the excess fiscal capacity of the districts will produce equitable rates among districts. However, should revenue in excess of that produced by an equitable rate on the excess fiscal capacity be required, it can be obtained by a state-wide levy on the total fiscal capacity of the state.

In the above example in which all service responsibilities of the county, the municipality, and the school district are combined, the boundaries of the municipality and the school district are assumed to be coterminous. While this assumption simplifies the application of the formula, it is not essential to its operation. The priced program of each unit could be subtracted individually from the $\$FC_D$ according to whatever priority is set. When the $\$FC_D$ of the district is consumed, the state support program provides the balance of revenue needed.

In the operation of the above formula, it is essential that every district be authorized to levy, or require the state to levy in its behalf, a tax on the fiscal capacity of the district. While the formula may be used to advantage over many existing formulas for schools only, its greatest potential is achieved if educational, county, and municipal public service responsibilities are combined in calculation of state support.

Measurement of Fiscal Capacity

The unit or base for the measurement of fiscal capacity was not presented in the preceding discussion because no definitive method of measuring fiscal capacity emerged from the factor analysis or analysis of data from the 24 districts in the four states. However, there appears some justification for using net personal income tax paid as a basis for measuring fiscal capacity. It emerged as the major component of Factors A-1 and A-3, which also correlated with other measures of wealth and income flow. For example, they correlated highly with effective buying income per capita and equalized valuation of residential property per capita. They also had a relatively high positive correlation with the educational level of the adult population, considered by some as an investment base akin to investment in business ventures, farm machines, residential rental properties, mercantile and manufacturing property, etc. In spite of several limitations, e.g., lack of close relationship with some tax bases and a negative correlation with the value of agricultural property, net personal income tax paid per capita emerged as the best single measure of fiscal capacity in all districts. In spite of its imperfections, it was selected as the most acceptable measure of fiscal capacity in the hypothetical model. It was also selected in part from the a priori judgment that $1.00 of net income tax paid is of essentially the same value in each class of district studied. Net personal income tax paid may be used in either of two ways: (1) as a direct index derived for each school district in states where this figure is available and as an adjusted figure derived from income per family in other states; and (2) as the dependent variable in a multiple regression equation for weighting the various other tax bases which may be used as measures of fiscal capacity. This weighting of the several variables will then permit the use of an index of taxpaying ability highly correlated with net personal income taxes paid when the net income tax paid is more difficult to secure than data for other tax bases. Possible independent variables which may be used are:

1. Equalized value of residential property
2. Equalized value of mercantile property
3. Equalized value of manufacturing property
4. Equalized value of agricultural property
5. Equalized value of personal property
6. Corporate income taxes per capita
7. Educational level of adult population.

To obtain the closest possible relationship of the variables with net personal income tax paid the relationship should be calculated separately for each class of district. The desirability of the separate calculation is indicated in the discriminant analysis which shows the classes of district to be significantly different. A related index for the measurement of fiscal capacity which will be used in demonstration of the hypothetical model is effective buying income. The major justification for its use is that it represents the base of the sales tax, one of the three major sources of tax revenue currently used in many states.

The third base used in demonstration of the hypothetical model is the equalized valuation of property. This study provides little, if any, statistical justification for using this base. It is made up of obviously different and unrelated components. Equalized valuation of property is unrelated or even negatively related to different types of property. To join the different forms of property in a total amount as a measure of fiscal capacity cannot be justified. However, because it is the universal measure of the ability to support local governmental functions, it is used in the hypothetical model for purposes of illustration.

In the hypothetical model no effort has been made to combine the several elements into one measure of taxpaying ability. However, this could be done in any one of four ways:

1. Use the bases in the same proportion as they are now used to support governmental functions, which, in essence, is to accept legislative judgment in weighting the several elements.

2. Assign weights based on the best judgment of economists or proposals in the literature.

3. Translate the bases into comparative earning capacities or income potentials and assign weights on this base.

4. Translate the different items into a comparable base unit such as net worth. This appears to have merit but cannot be done adequately for individual school districts without more information than is currently available. However, any method of determining fiscal capacity is easily "geared" into the hypothetical state support model as long as the percent of the state total found in each district can be ascertained.

Operation of the Formula

The operation of the proposed formula is shown for the six districts in Wisconsin. Separate computations will be shown using three different methods of measuring fiscal capacity. Example I uses net income tax paid as a basis of measuring fiscal capacity, Example II uses effective buying income, and Example III uses equalized valuation of property. Explanation of the method of calculation, how the needed data were obtained, and problems encountered are presented below.

The first measure of fiscal capacity used was net personal income tax paid. Since data on net personal income tax paid for the state as a whole have not been completely verified and audited for the fiscal year ending June 30, 1963, the state total used is a preliminary figure. Data for the six districts were not directly available, but were derived from income taxes shared with localities from which taxes were collected. From percent of income tax returned to each community, it was possible to reconstruct the total income taxes paid by that community. Where school districts were not contiguous with municipal boundaries, the percent that the equalized valuation of municipal property in the school district was of total equalized valuation of the municipality was applied to the net personal income tax of the municipality to apportion that part of the tax to the school district.

A second measure examined was effective buying income. Current information is reported in Sales Management, "Survey of Buying Power", June 10, 1963, for effective buying income as a state total and for each of the larger districts. There are limitations to the data. Since the Milwaukee school district is virtually contiguous with the city and effective buying income is reported for the city, no problem arose there. This was true for Appleton and Merrill although there is some school district territory outside the cities. Information used was limited to the city. Because effective buying income was not reported for Cudahy, it was necessary to achieve the best approximation. This was done by using the reported data for South Milwaukee. The two cities are adjacent and are very similar in size and socio-economic characteristics. The Preble district covers the more populous area of Brown County outside the city of Green Bay. However, since the data were not reported for Preble, Brown County data were used. Richland Center was not reported, but the school district constitutes a major portion of Richland County so the county data appeared suitable.

The third measure examined was equalized valuation of all property in the state and in each school district. For the six Wisconsin school districts, this information for 1962 was readily available from the Department of Taxation. Although the factor analysis discussed in Chapter V identified valuation of residential property as a better measure of fiscal capacity, total property valuation was selected because of its almost universal use in state support programs.

The method of calculating service responsibility has already been discussed. For purposes of illustration, the municipal and county portions of service responsibility were considered to be equivalent to the property tax levied for this purpose, since any additional revenue would be included in other revenue receipts which are to be subtracted in computing a district's service responsibility. Again, as in calculating fiscal capacity, the percent that the school district equalized valuation was of the equalized valuation of the municipality and of the county was used to apportion the total levy of the county and municipality to the school district. The school portion of service responsibility was calculated by again using the school levy for the district plus state aids received by the school district. This was done to eliminate any effect of the present state aid formula and to approximate more closely the money needed to support the service responsibility of the district. The total service responsibility for each district was then expressed as a percent of the service responsibility for the state, which was computed in the same manner.

The priced program of the district was determined by obtaining from the Wisconsin Department of State Audit the 1962 disbursements of counties and municipalities and again apportioning these disbursements by school districts according to the percent of equalized property valuation that the school district portion of the county or municipality comprised of the total equalized property valuation of the county or municipality. These disbursements were exclusive of intergovernmental transfers. School district disbursements, as part of the priced program, were readily available to the research staff for 1962-63 in the school district budgets for these six districts. The utilization of the percent that the school district portion of the equalized property valuation is of the total equalized property valuation of the county or municipality is a severe limitation on the precision of the data. However, this provides the best currently available criterion for calculating fiscal capacity, service responsibility, and priced program.

Calculation of support under the model was limited to the six Wisconsin school districts since the required data were not readily available for the three other states.

Finally, it should be noted that the priced program employed for demonstration purposes in this model is the program which presently exists. A "true" priced program, as conceived in this study, would be developed under state leadership using the best knowledge available in keeping with policies set by the state.

Illustration of the hypothetical model is shown for two purposes. First, it demonstrates the practical application of the hypothetical model; i.e., its workability in actual school districts using 1962-63 data. Second, it highlights again the necessity of accurate measurement of fiscal capacity by showing the large variation in the fiscal capacities assigned districts when different measures are used. The following illustration shows the amounts allocated to each of the different districts, for county, municipal, and school support in the equalization of support of governmental functions. The actual figures used as the basis for the following calculation are shown in Appendix D.

When net personal income tax paid is used as the base for computation, the state support or payment to state equalization would be as shown in Table 9.1.

TABLE 9.1

SUPPORT ALLOCATIONS AND EQUALIZATION PAYMENTS UNDER THE HYPOTHETICAL MODEL IN SIX WISCONSIN SCHOOL DISTRICTS USING NET PERSONAL INCOME TAX PAID

School District	State Support Allocation	Payment to State Equalization
Milwaukee	$22,525,950	none
Appleton	none	$26,099,748
Merrill	1,030,895	none
Cudahy	951,666	none
Preble	190,470	none
Richland Center	1,400,777	none

Of the districts studied, only Appleton has fiscal capacity greater than its service responsibilities. The other districts would all receive state support under the proposed formula, some districts in amounts substantially higher than they actually received in 1962-63.

When effective buying income is used to measure fiscal capacity, the results are at variance with those reported when fiscal capacity is measured by net personal income tax paid. This may be due in part to the fact that effective buying income was not reported for all districts. Consequently, it was necessary to substitute county averages or amounts found in neighboring communities. It will be noted that the amounts required for equalization and payment to state equalization is much smaller than when net personal income tax paid is used. This measure of fiscal capacity appears to converge the districts. The results using effective buying income as a base are shown in Table 9.2.

TABLE 9.2

SUPPORT ALLOCATIONS AND EQUALIZATION PAYMENTS UNDER THE HYPOTHETICAL MODEL IN SIX WISCONSIN SCHOOL DISTRICTS USING EFFECTIVE BUYING INCOME

School District	State Support Allocation	Payment to State Equalization
Milwaukee	$3,359,133	none
Appleton	none	$3,938,252
Merrill	none	560,564
Cudahy	967,183	none
Preble	none	569,719
Richland Center	742,267	none

Merrill and Preble would receive state support when fiscal capacity is measured by net personal income tax paid, but would be required to make payments to state equalization when effective buying income is used.

The final comparison is made by using equalized valuation of property as the base for measuring fiscal capacity. As indicated earlier, this base, while difficult to defend, is almost universally used to measure fiscal capacity of school districts and local governmental units. The results of using this base are shown in Table 9.3.

TABLE 9.3

SUPPORT ALLOCATIONS AND EQUALIZATION PAYMENTS UNDER THE HYPOTHETICAL MODEL IN SIX WISCONSIN SCHOOL DISTRICTS USING EQUALIZED VALUATION OF PROPERTY

School District	State Support Allocation	Payment to State Equalization
Milwaukee	$10,077,390	none
Appleton	none	$7,742,214
Merrill	none	193,128
Cudahy	none	1,420,188
Preble	none	1,021,794
Richland Center	300,373	none

If equalized valuation of property is used to measure fiscal capacity as related to service responsibilities, only Milwaukee and Richland Center would receive state support allocations. The balance of the districts would contribute to state equalization

While the limitations of the figures used do not justify conclusions relative to specific amounts of state support or payment to state equalization, they do permit four generalizations:

1. Because of its heavy service responsibility load in relation to fiscal capacity, Milwaukee is entitled to state support allocation. This is demonstrated by all three of the criteria of fiscal capacity used.

2. The fiscal capacity of Appleton in relation to its present service responsibility will require Appleton to assist other communities in any equalization program. Appleton will not be entitled to support of schools or other governmental functions unless payment is made on a percent-of-cost basis or some other base not related to fiscal capacity.

3. Merrill is entitled to a substantial state support allocation if fiscal capacity is measured by net personal income tax paid. On the same basis, Cudahy and Preble are entitled to state support allocations. In other measures of fiscal capacity, the position of Merrill, Cudahy, and Preble changes from state support allocation to obligation payment to state equalization.

4. Richland Center is entitled to state support allocation on any of the three bases of fiscal capacity.

While the hypothetical model has limitations, particularly in operational calculation from 1962-63 school district data, and is at this point dependent on human judgment rather than objectively established criteria, it is workable and has considerable potential. It should be studied and tested to correct its weaknesses and identify its strengths. Only then can a constructive model be developed which will achieve the goals of satisfactory state support for all governmental functions. This is a priority requirement for the years ahead.

Notes to Chapter IX

1. National Education Association, Committee on Educational Finance, "School Support and Municipal Government Cost," Long-Range Planning in School Finance (Washington, D. C.: National Education Association, 1963), p. 129.

   Research Council of the Great Cities Program for School Improvement, Fiscal Policies to Meet the Needs of the Great City School Systems in America (Chicago, Illinois: The Council, 1963).

2. National Education Association, Committee on Educational Finance, New Directions in Financing Public Schools 1960 (Washington, D. C.: National Education Association, 1960) p. 17.

APPENDICES

APPENDIX A

PHASE II DATA FORMS

Directions and Explanation

The following information is designed to assist local school system personnel in completing data gathering forms 1 through 7. It will supplement directions contained in the forms themselves. A number of the forms appear self explanatory and are not mentioned in the following discussion.

EFS Form 1--General Information

This form is designed to identify items of general information relative to a school system. Where possible, the information provided should be for the 1962-63 school year.

Item 1, School Year

Question b asks for the number of days that schools are actually taught with pupils present. The total of b, c, and d should equal a.

Item 4, Graduates

This item refers to high school graduates in 1962 who are continuing their education.

Item 7, School Lunch Program

For question a, report average number of meals served each day. In question b, if the charge to pupils varies by grade levels, report the charge per meal for each grade level or group of grade levels. Question c refers to whether pupils are required to eat their noon meal at the school or whether they may leave the school grounds during the noon recess. If pupils are required to remain at school during the lunch period, check "required." If they may leave the school grounds to eat at home or elsewhere, check "optional."

Item 8, Recreational Program

Recreation program, as used in this section, refers to any program conducted outside of regular school hours for children or adults in the community. Indicate in question a, whether such a program is conducted by the city or other municipal unit of government, county, or school district.

In question b, indicate the total budget for recreation (if any) of each agency. In question f, identify, for example, a recreational program conducted and budgeted by the city or county but using public school facilities or other special arrangements.

Item 10, Special Service Personnel

This section seeks to identify the extent to which the services of the specialized personnel listed are provided by the school district, by the city or other municipal governmental unit, or by a county to serve the school-age group. Identify the unit providing the service by reference to the unit which employs (pays the salary of) the particular service worker. For example, if school psychologists serve the district but are paid by the city, report them as employed by the city.

Item 11, Community Services

Item 11a, Library Service, seeks to identify the extent to which the school and/or school budget is responsible for providing library services to the community. Identify responsibility for providing library services to adults and out-of-school children by completion of the appropriate blanks.

Item 11b, Welfare Activities, asks for the budget of the school for such welfare services for indigent youngsters as tuition payments, free meals, transportation, books, locker, school supplies, etc.

EFS Form 2--Age-Grade Distribution

Report age-grade distribution for the 1962-63 school year on the basis of pupils' ages on date designated at the top of the form. Report as postgraduates only those pupils who have completed 12 grades of school, but who are enrolled for additional course work in grades 9, 10, 11, or 12. Do not report pupils enrolled in junior college or grades 13 and 14 as postgraduates.

EFS Forms 3A and 3B--Staff Deployment and Utilization

Question 3, Annual Teaching Salary

Report only salary paid for classroom teaching. If extra compensation is paid for co-curricular or other assignments, indicate the amount paid in the last colum--Remarks, Extra Compensation, etc.

Question 5, Years of Experience

Report as teaching experience all experience which involved teaching and part-time administrative, supervisory, or guidance activities. Under administrative and/or supervisory experience, report only years of full time responsibility in an administrative, supervisory or guidance capacity. The total reported under teaching and administrative or supervisory experience should equal the total number of years spent in professional education. Under other experience, report only experience not related to teaching, administration, or supervision.

Where I. Q. information is readily available, identify the range of ability within each class and the average for the class. Where I. Q. information on each class is not readily available, identify the level of ability where homogeneous grouping is used, i.e., high, average (mean) or low by checking the appropriate column. Where ability grouping is not used, check the mean (average) column to indicate the ability of the class. (It is not necessary to provide this information for co-curricular or extra-curricular groups.)

EFS Form 3C--Staff Deployment and Utilization

This form should be completed by all administrative, supervisory, guidance, and other certificated personnel in the school system who do not complete Form 3A or 3B. A number of activities commonly engaged in by people in the above capacities have been identified. Each respondent is asked to rank these activities in accordance with the time devoted to each activity during the course of the school year. For example, if conferences with pupils occupies more of the individual's time than any other activity during a year, this should be ranked "1."

Under Question 5, report part-time teaching and part-time administrative responsibilities as teaching experience. Report only full-time administrative or supervisory experience in the administrative or supervisory category.

EFS Form 5--Inventory of Space and Equipment

Report rooms by number or name. It is not necessary to report toilet rooms, closets, and small storage areas. However, major storage areas such as those used for storing supplies, audio-visual equipment and the like should be reported. List major office spaces, such as guidance office, principal's office, etc.

Under dimensions, report length, width and height. If the length, width or height of a room is variable, report the average for the room.

In determining the replacement value of equipment in each room do not report portable equipment which is customarily moved from room to room. Report only that equipment which is part of the room's normal complement of equipment. It is not necessary to report supplies such as erasers, chalk, etc. Report value of portable equipment for the school system as a whole. In the case of shops, science laboratories, homemaking laboratories, and the like, include the value of all machinery, tools, and other equipment which is part of the normal complement of teaching tools in the classroom.

EFS Form 6--Private Cost of Public School Activities

The first group of activities listed have reference to spectator participation by pupils. Cost of participation in athletics and similar activities are not to be reported in the first section. These are reported later in the quentionnaire.

Check one or more appropriate columns to indicate whether activities are supported from district-wide funds, whether they are supported from the activity or other non-tax funds, or whether they are paid by pupils. If paid by the pupil, indicate whether the payment is required or voluntary by checking the appropriate columns. In activities in which participation is voluntary, but which require direct payments by pupils if they choose to participate, indicate the payment is voluntary. The information requested on this form relates to the 1962-63 school year. Add any activities found in your school which are not listed on the form. Where number of pupils is not known; for example, the number of pupils attending games or plays, report your best estimate of the number of pupils in attendance.

EDUCATIONAL FINANCE STUDIES
General Information

School System ______________________________ School Year ____________

1. School Year:
   a. Number of days in school year __________
   b. Number of days pupils present __________
   c. Legal holidays counted __________
   d. Days devoted to in-service activity __________
   (Conventions, workshops, etc.)

2. School Day:

a. Number of minutes in school day by grades (exclusive of lunch period):

K	1	2	3	4	5	6	7	8	9	10	11	12

b. Number of minutes in lunch period by grade:

K	1	2	3	4	5	6	7	8	9	10	11	12

3. School Census

Age Sex	B	1	2	3	4	5	6	7	8	9	B-4
Boys											
Girls											
Total											
Age Sex	10	11	12	13	14	15	16	17	18	19	B-19
Boys											
Girls											
Total											

4. Graduates of past year enrolled in:

	4 Year College or Univ.	Univ. Extension Center	County Teachers College	Nursing	Business College	Voc. or Tech. School	Other
Boys							
Girls							
Total							

5. Organization of School System

a. Graded organizational structure: 6-3-3 _____ 8-4 _____ 6-2-4 _____
Other (specify) ______________________________

b. Number of elementary schools: 1-4 rooms _____ 5-8 rooms _____
9-16 rooms _____ 17-24 rooms _____ other ______________

c. Number of junior high schools __________

d. Number of senior high schools __________

6. Transportation:

Distance from Pupils' Home to School	Total Pupils Enrolled			Total Pupils Transported At District Expense		
	K-6	7-9	10-12	K-6	7-9	10-12
Less than 2 miles						
2 miles to 5 miles						
More than 5 miles						

a. Number of buses owned by district __________; contracted by district _______.

b. Number of bus routes __________. Ave. length of bus routes ________miles.

c. Longest bus route ______________. Shortest bus route ________________.

d. Annual cost of pupil transportation (budget or contract figure) __________.

7. School lunch program

a. Number of meals served ___________

b. Charge per meal to pupils __________

c. Is taking meals at school optional _____, required _____.

Reported by ________________________

EFS-1b

8. Recreational Programs

a. Conducted by city _____ county _____ school district _______

b. Total recreational budget: city ______ county ______ school district _____

c. Total number of activities _________ No. of participants in city program ____

d. Total number of activities ______ No. of participants in county program _____

e. Total number of activities ______ No. of participants in school program _____

f. Special features of recreational program of city, county or school program.

1. ____

2. ____

3. ____

4. ____

5. ____

9. Attendance Services

a. Number of employees in attendance department of school district _________
full time equivalents ________________.

b. What percent of total time is devoted to enforcement of attendance of
1) public school pupils? __________ 2) Non-public school pupils?_________

10. Special Service Personnel

a. Number employed (Express as full time equivalents)

1. Guidance workers: School ________ City __________ County __________

2. Nurses: School _______ City ________ County _________

3. Psychologists: School _______ City _______ County _______

4. Psychometrists: School _______ City ______ County _______

5. Psychiatrists: School _______ City _______ County _______

6. Social Workers: School _______ City _______ County ________

7. Teachers of homebound: School ________ City ________ County _________

11. Community Services

a. Library Service

1. Is library services a city ____, county ____, and/or school budget ____ activity?

2. Total library budget: School ________ City ________ County __________

3. Total circulation: School ________ City ________ County __________

b. Welfare Activities

1. Total budget of school for welfare purposes (major account 1140 and 1150) ____________

2. Total welfare budget of City ________ County __________

3. Total number of persons receiving public assistance in City ________ County __________

12. Community Use of School Buildings

a. Number of times used by all groups during the year ________

b. Number of persons using __________

13. Services to Non-public School Pupils

a. Cost of (major account 1160)

1. Instructional services ____________

2. Attendance services ______________

3. Health services ____________

4. Transportation services ____________

14. Special Education

Pupils enrolled in:	Number	Average Per Pupil Expenditure
1. Classes for accelerated	________	________
2. Classes for handicapped:		
a. Physically	________	________
b. Deaf and hard of hearing	________	________
c. Blind and defective of sight	________	________
d. Speech defective	________	________
e. Mentally retarded	________	________
f. Trainable	________	________
g. Culturally deprived	________	________
h. Others		
1. ____________________	________	________
2. ____________________	________	________
3. ____________________	________	________
4. ____________________	________	________
5. ____________________	________	________

15. List any subjects, activities, or innovations in instructional methods or procedures which have been instituted or initiated during the past five years (1958-59 through 1962-63) in your school system.

EDUCATIONAL FINANCE STUDIES
Age - Grade Distribution

City ______________ School Year ________ School ______________ Date ________

Persons	GRADE															
	Nursery	Kdgn.	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ungraded	Ninth	Tenth	Eleventh	Twelth	Post Gra
Total Enrolled																
Age 4 or less																
Age 5																
Age 6																
Age 7																
Age 8																
Age 9																
Age 10																
Age 11																
Age 12																
Age 13																
Age 14																
Age 15																
Age 16																
Age 17																
Age 18																
Age 19																
Age 20																
Age 21 or more																

EFS-2

Reported by ______________

EDUCATIONAL FINANCE STUDIES
Staff Deployment and Utilization--Junior and Senior High School Teachers

School System______________________School______________School Year______

Employee's Name______________ ______________ ______________Position or Title______________
(Last) (First) (Middle I.)

Years of school completed (circle): 16 or less 17 18 19 or more 2. Degrees Held:______________

3. Annual Teaching Salary______________ 4. Number of weeks employed by district annually______________

5. Years of experience: Teaching: Total______ Local______; Administrative and/or supervisory: Total______

Local______; Other: Total______ Local______ 6. No. of years in present position______

Class or Activity	Grade Level	No. of Pupils	Pupil Ability (IQ)			Ave. No. Pds. / Week	Length of Pds.	No. of Weeks/ Year	Classroom Name or Number	Other Persons Involved (If any)	Remarks Extra Comp., etc.
			High	Low	Mean						
1. Curricular Assignments* A											
B											
C											
D											
E											
F											
G											
2. Co-curricular Assign's** A											
B											
C											
D											
3. Other Assignments*** A											
B											
C											

EFS-3a

*English 1A, General Science, Algebra, etc.
**Football, newspaper, club sponsor, etc.
***Bus chaperone, ticket collector, etc.

Reported By______________________

EDUCATIONAL FINANCE STUDIES
Staff Deployment and Utilization--Elementary School Teachers

School System______________________________School______________________School year____

Employee's Name______________________________________Teaching Assignment (Grade or subjects___
(Last) (First) (Middle I.)

____________________ 1. Years of School completed (circle): 14 or less 15 16 17 18 19or

2. Degrees held:____________________ 3. Annual Teaching Salary__________4. Number of weeks employed

district annually__________ 5. Years of experience: Teaching: Total____ Local____; Administrative and/o

supervisory: Total____ Local____; Other: Total____ Local____ 6. No. of years in present position________

Grade Taught and Activities	No. of Pupils	Pupil Ability (IQ)			Ave. Min./Week	Classroom Name or Number	Other Persons Involved (If any)	Remarks (extra compensation, e
		High	Mean	Low				
1. Curricular Assignments*								
a. Language Arts								
b. Mathematics								
c. Science								
d. Social Studies								
e. Art								
f. Physical Education								
g. Music								
h.								
i.								
2. Co-curricular Assign.**								
a.								
b.								
3. Other Assignments***								
a.								
b.								

*Kindergarten teachers need not complete a-i. Special teachers (art, music, physical education) need not report pupil ability.

** Athletics, club sponsor, noon hour supervision, etc.

*** Dance chaperone, ticket collector, etc.

EFS-3b

Reported by________________________

EDUCATIONAL FINANCE STUDIES
Staff Deployment and Utilization--Administrative and Supervisory

School System______________________________ School Year________

Name____
(Last) (First) (Middle)

Position or Title______________________________________

1. Years of school completed (circle): 16 or less 17 18 19 or more

2. Degrees held:______________________ 3. Annual salary (from district)______

4. Number of weeks employed by district annually:______________________

5. Years of experience: Teaching: _____ Local_____; Administrative or supervisory: Total_____ Local_____; Other: Total_____ Local_____

6. Number of years in present position__________

Activity	Rank in order of time spent per year	Remarks
Organizing, scheduling, planning		
Ordering and purchasing		
Preparing bulletins & notices for staff		
Selecting instructional materials		
Preparing instructional materials		
Research and surveys		
Meeting school or parent groups		
Preparing releases for news media		
Speaking to community groups		
Attending prof. meetings and conventions		
Interviewing prospective employees		
Phone calls & general correspondence		
Meeting sales representatives		
Conferences with pupils		
Conferences with parents		
Conferences with teachers		
Staff meetings		
Administration of pupil transportation		
Administration of school lunch		
Visiting classrooms		
Other:		

*Report total number of hours per year devoted to each activity

EFS - 3C

Reported By______________________

EDUCATIONAL FINANCE STUDIES

Staff Deployment and Utilization--Noncertificated Staff

School System____________________School____________

Employee's Name______________________________School Year______
(Last) (First) (Middle I.)

Position or Job Title____________________________

1. Years of school completed (circle) 8 or less 9 10 11 12 14 15 16/more
2. Annual salary paid by district____________ 3. No. of weeks employed by district annually____________ 4. Total years employed by district__________
5. Total years in present position____________
6. Total years of experience in position similar to present position____________

Activity	No. of hours per week	Remarks (extra compensation, etc.)
1. Activities Performed Regularly*		
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		
l.		
m.		
n.		
2. Activities Performed Occasionally**		
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		
i.		
j.		
k.		

*Cleaning and dusting, food preparation, mimeographing, etc.
**Electrical repairs, refinishing floors, etc.

EFS - 3d

Reported By______________

EDUCATIONAL FINANCE STUDIES

Inventory of District-Owned Property
(All buildings and sites)

School District______________________________ School Year________

Name of School or Type of Property	Acres in Site	Location or Address	Pupils Currently Housed (no.)	Amount of Insurance Carried

EFS - 4

Reported By:________________________

EDUCATIONAL FINANCE STUDIES

Inventory of Space and Equipment

School System__________________Building________________________School Year____

Total Square Footage of Building (including corridors, storage rooms, etc.)____

Room (Number or Name)	Purpose for which Room Designed	Dimensions			Replacement Value of Equipment
		Length	Width	Height	

EFS - 5

Reported by________________________________

EDUCATIONAL FINANCE STUDIES
Private Cost of Public School Activities

School System ____________ School ____________ School Year ______

Activity, Program or Service	Paid from District Funds	CHECK Paid from Activity or Other Non-Tax Funds	Paid by Pupil		Number of Pupils Participating	Average Cost to Pupil/yr.			
			Required	Voluntary		K-6	7-8	9	10-12
Activity Card									
Admission Charges:									
Basketball*									
Football*									
Other Athletic Events*									
Plays*									
Concerts*									
School-wide Organizations									
Boys' Club									
Girls' Club									
G. A. A.									
Letterman's Club									
National Honor Society									
Student Council									

EFS-6a *Report number of pupils participating as spectators

Activity, Program or Service	CHECK				Number of Pupils Participating	Average Cost to Pupil/yr.			
	Paid from District Funds	Paid from Activity or Other Non-Tax Funds	Paid by Pupil						
			Required	Voluntary		K-6	7-8	9	10-12
Athletic Participation									
Baseball									
Basketball									
Cross Country									
Football									
Golf									
Gymnastics									
Swimming									
Tennis									
Track									
Wrestling									
Intramural Sports									
Cheerleading									
Curricular Related Organizations									
Astronomy Club									
Biology Club									
Debate									
Dramatics									
Forensics									
French Club									

Activity, Program or Service	CHECK				Number of Pupils Participating	Average Cost to Pupil/yr.			
	Paid from District Funds	Paid from Activity or Other Non-Tax Funds	Paid by Pupil			K-6	7-8	9	10-12
			Required	Voluntary					
Future Farmers									
Future Homemakers									
German Club									
Latin Club									
Library Club									
Math Club									
Photography Club									
Radio Club									
Russian Club									
Science Club									
Spanish Club									
Dances									
Regular Dances									
Prom									
Homecoming									

Activity, Program or Service	CHECK				Number of Pupils Participating	Average Cost to Pupil/yr.			
	Paid from District Funds	Paid from Activity or Other Non-Tax Funds	Paid by Pupil						
			Required	Voluntary		K-6	7-8	9	10-12
Donations									
Benefit Drives									
Dues									
Class									
Homeroom									
Fees and Use Charges									
Class Rings									
Medical & Dental Exams									
Milk									
School Lunch									
Student Insurance									
Transportation									
Supplies and Equipment									
Kindergarten									
Grade 1									
Grade 2									
Grade 3									
Grade 4									

Activity, Program or Service	CHECK Paid from District Funds	Paid from Activity o Other Non-Tax Funds	Paid by Pupil Required	Voluntary	Number of Pupils Participating	Average Cost to Pupil/yr. K-6	7-8	9	10-12
Grade 5									
Grade 6									
Grade 7									
Grade 8									
Art									
Business Ed.									
English									
Foreign Languages									
Homemaking									
Industrial Arts									
Mathematics									
Physical Education									
Science									
Social Studies									
Field Trips and Excursions									

EFS-6e

Activity, Program or Service	CHECK				Number of Pupils Participating	Average Cost to Pupil/yr.			
	Paid from District Funds	Paid from Activity or Other Non-Tax Funds	Paid by Pupil			K-6	7-8	9	10-12
			Required	Voluntary					
Fines									
Library									
Graduation									
Announcements									
Cap and Gown									
Class Gift									
Flowers									
Photographs									
Musical Activities									
Band or Orchestra									
Instruments									
Uniforms									
Music & Supplies									
Choral									
Uniforms									
Music & Supplies									

	CHECK								
Activity, Program or Service	Paid from District Funds	Paid from Activity or Other Non-Tax Funds	Paid by Pupil		Number of Pupils Participating	Average Cost to Pupil/yr.			
			Required	Voluntary		K-6	7-8	9	10-12
Rental Fees									
Textbooks									
Lockers									
Towel Service									
Sales									
Candy Sales									
Baked Goods									
School Publications									
Newspaper									
Student Handbook									
Yearbook									

Reported by:____________________

EDUCATIONAL FINANCE STUDIES

Summary of Data to Be Gathered

In addition to the information recorded on forms EFS-1 through EFS-6, the following data is needed:

1. Map of school district
2. Copy of most recent district budget
3. Copy of salary and extra compensation schedule
4. Copy of master schedule for each building
5. Floor plan for each building including:
   a. Room number or other room designation
6. In-service program of district (brief description and time allocated)
7. Any available breakdown on cost of supplies, e.g., by activity, teacher, classroom, etc.
8. Any available breakdown on cost of operation, maintenance, and fixed charges, e.g., by individual schools, activities, departments, etc.

APPENDIX B
MEANS AND STANDARD DEVIATIONS OF 161 VARIABLES IN 104 WISCONSIN SCHOOL DISTRICTS

	VARIABLES	ALL DISTRICTS		TYPE OF DISTRICT										
				LARGE CITY	MEDIUM CITIES		SMALL CITIES		EST. SUBURBS		DEV. SUBURBS		AG. SERV. CENTERS	
		MEAN	STD. DEV.	MEAN	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.
1	Popul. sch. dist.	23776.808	73409.806	740879.000	51311.438	25022.659	12517.591	4252.052	33934.167	22874.183	14364.091	5176.409	5706.854	1959.064
2	Equal. val./cap.	4798.364	4780.613	4912.360	4637.383	561.103	6111.654	9935.042	6561.015	827.786	5616.958	2299.554	3839.799	784.312
3	Assessed val./cap.	2680.235	980.949	2590.300	2645.759	469.757	2685.424	1220.339	2845.528	519.366	3316.754	1268.566	2524.692	897.350
4	Equal. val. resid. prop./cap.	2390.068	1164.625	2489.800	2578.581	381.772	2327.022	1036.318	4216.608	1178.538	4070.339	1633.821	1740.669	336.108
5	" " merc. " "	537.019	187.315	930.590	690.387	189.235	516.564	121.805	565.683	239.018	448.769	240.212	503.714	150.547
6	" " manuf. " "	501.428	543.813	646.540	611.388	231.190	558.639	490.309	729.832	604.393	377.387	474.506	435.405	628.583
7	" " agric. " "	294.852	327.711	1.710	26.401	23.176	139.308	115.674	14.122	18.096	282.121	232.858	499.743	353.750
8	Civ. labor force	9518.798	31342.494	316672.000	20505.313	10677.916	4685.955	1618.039	13568.333	9311.001	5216.727	1934.673	2152.354	743.259
9	Families in dist.	6011.000	18685.508	188871.000	12882.000	5834.297	3117.682	1043.554	8875.833	6012.408	3552.182	1355.125	1442.563	476.126
10	Bank footings/capita	1462.298	709.117	2267.330	1559.801	340.030	1618.525	585.199	936.433	151.920	237.336	359.478	1687.875	635.863
11	Assets—savings & loan inst./cap.	410.381	439.202	1227.530	619.533	280.145	501.689	427.231	798.942	338.656	71.000	124.581	310.996	450.307
12	% resid. buildings owner-occup.	72.300	7.200	57.710	66.091	4.212	72.728	3.443	68.537	9.395	84.096	6.390	72.337	5.458
13	Mean family income	6930.269	1731.193	7418.000	7214.375	588.129	6679.909	845.950	10766.667	3189.955	9062.364	1508.807	5972.000	629.465
14	Effective buying income/cap.	1841.548	397.779	2273.000	2118.688	162.372	1833.909	175.715	2606.833	499.622	2253.455	387.109	1553.625	172.767
15	Effective buying income/family	6380.942	1339.151	8912.000	7338.063	843.815	6254.773	527.904	8950.167	1657.606	7824.545	1080.230	5415.021	477.262
16	Net reported pers. income tax/cap.	28.532	21.512	32.960	31.754	4.255	27.070	9.401	72.453	50.930	41.586	33.014	19.553	4.053
17	" " corp. " " "	14.735	13.539	22.520	21.682	11.741	17.082	12.090	21.497	19.443	14.123	16.051	10.477	11.581
18	Retail sales/capita	1226.096	430.266	1578.000	1553.938	167.318	1448.136	372.728	1001.667	267.759	911.727	315.755	1107.813	438.585
19	" " /family	4199.654	1407.335	5233.000	5193.063	623.140	4935.409	1246.017	3411.000	783.875	3168.273	1064.927	3844.708	1437.617
20	% labor force—prof., tech., manag.	19.060	5.969	14.700	18.944	3.233	18.250	2.631	28.338	13.143	23.104	8.818	17.474	3.662
21	" " " —farmers	3.682	4.133	.060	.269	.241	1.951	1.540	.063	.066	1.675	2.196	6.600	4.265
22	" " " —craftsmen, foremen	13.658	3.261	14.210	13.978	2.070	13.776	2.218	13.358	5.857	17.925	3.621	12.545	2.569
23	" " " —clerical	40.306	5.942	46.440	43.678	3.748	42.619	4.521	42.480	5.212	41.243	3.691	37.507	6.348
24	" " " —private hshld., service	16.472	4.247	14.640	15.489	1.439	16.909	2.958	9.588	2.376	10.399	3.177	18.890	3.264
25	" " " —unemployed	3.592	1.610	4.610	4.134	2.163	3.474	1.393	2.390	.724	2.512	.816	3.842	1.521
26	" " " —other	3.135	1.311	5.340	3.509	.897	3.020	1.256	3.783	1.570	3.144	1.290	2.934	1.339
27	Median yrs. educ. age 25 over	10.705	1.131	10.500	11.100	.788	10.505	.928	11.900	1.036	11.845	.847	10.258	1.060
28	Postal receipts/cap.	13.864	9.879	26.490	19.144	7.489	21.013	14.039	3.937	5.610	3.235	4.875	12.240	4.020
29	Motor vehicle regist./family	1.641	.222	1.330	1.693	.376	1.554	.152	1.407	.078	1.617	.274	1.704	.118
30	Telephones/capita	.391	.061	.440	.449	.036	.398	.053	.440	.000	.450	.032	.347	.043
31	Total gen. prop. tax rate	24.480	3.530	30.672	23.370	3.100	23.460	3.780	24.930	1.540	24.230	3.310	25.190	3.490
32	County tax rate on equal. val.	6.420	2.200	8.792	4.680	1.410	5.770	1.810	8.660	.380	6.440	2.130	6.970	2.230
33	Mun. " " " " "	5.200	2.140	10.583	5.840	1.880	5.730	1.610	4.240	2.360	2.010	1.680	5.480	1.680
34	Sch. " " " " "	12.560	2.420	11.100	12.730	1.430	11.710	2.250	11.750	2.140	15.490	3.280	12.350	2.050
35	Receipts gen. prop. tax/cap.	92.113	28.903	116.530	92.366	11.008	80.180	17.616	145.483	27.426	120.481	51.832	83.818	15.191
36	" " " " for mun. purp./cap.	25.919	11.510	57.630	33.627	10.927	27.274	9.481	30.765	15.150	15.036	14.454	23.957	7.344
37	Income tax from state/capita	17.658	11.642	23.160	20.644	7.280	18.670	7.659	37.222	18.257	21.785	20.569	12.694	5.480
38	All other tax receipts/capita	12.138	12.388	8.500	18.476	10.536	12.020	6.702	6.268	2.571	17.242	31.218	9.718	4.578
39	Rev. from spec. assessments/cap.	4.508	7.314	6.610	4.778	3.927	3.877	3.554	6.980	4.991	13.892	17.686	2.203	1.903
40	" " licenses "	1.573	.709	2.510	1.683	.349	1.388	.439	1.598	.718	2.455	1.058	1.396	.626
41	" " fines and forfeitures"	.817	.483	3.000	.998	.392	.758	.347	1.492	.348	.990	.523	.615	.326
42	" " gifts and grants "	8.569	3.143	6.690	8.136	2.534	8.682	2.973	5.067	1.159	6.225	2.365	9.676	3.098
43	" " all other gen. rec. "	1.325	1.931	.420	.671	.809	1.139	1.847	.367	.608	.867	1.019	1.873	2.319
44	" " commercial receipts "	5.584	4.459	13.190	9.091	4.285	7.400	5.173	2.618	1.806	2.476	2.731	4.506	3.359
45	Receipts from mun. service enterp./cap.	35.341	35.612	13.700	23.975	17.795	41.187	35.543	12.177	5.597	2.130	2.792	47.[illegible]	39.033
46	Prop. tax delinq./cap.	12.389	8.380	36.640	15.180	7.872	8.685	6.453	13.802	7.888	16.549	9.196	11.522	7.691
47	% total prop. tax delinq.	11.688	7.062	23.920	14.334	6.760	9.697	6.202	9.118	5.783	11.800	3.255	11.759	7.778
48	Mun. sec. sold/capita	50.533	86.030	422.460	108.716	93.223	30.271	39.414	142.288	83.091	68.430	105.830	17.107	50.553
49	Disburse. for gen. gov./cap.	8.537	6.755	11.220	7.575	.800	8.047	5.177	10.302	1.908	11.702	9.989	8.080	7.719
50	" " protection "	14.824	8.647	30.120	20.492	5.683	15.055	4.086	26.095	4.917	12.178	8.029	11.707	9.109
51	" " health & san./cap.	10.253	10.439	23.550	11.418	3.658	10.433	7.936	21.072	6.065	13.258	12.977	7.464	11.444
52	" " welfare "	1.147	2.592	.010	1.703	1.324	.958	.989	.000	.000	.232	.355	1.424	3.594
53	" " highways "	27.145	11.941	37.910	25.549	8.048	24.969	8.387	30.222	10.181	29.953	19.985	27.421	11.922
54	" " education "	3.965	2.482	4.850	3.504	.798	3.776	2.281	3.125	.973	4.192	5.098	4.241	2.097
55	" " recreation "	4.890	6.384	2.870	6.544	2.186	7.665	11.652	3.922	.566	1.594	1.677	3.986	3.982
56	" " public service "	41.434	57.387	23.200	27.862	20.006	63.845	102.432	17.678	16.487	3.875	6.998	47.642	37.642
57	Unclass. disbursements/cap.	3.277	2.830	9.940	5.209	2.694	4.138	3.537	4.085	1.560	.728	.718	2.583	2.052
58	Securities purchased/cap.	50.444	81.634	388.820	111.465	96.243	42.933	56.549	152.392	104.113	47.905	82.034	14.334	33.235
59	Debt service/capita	11.100	10.782	20.670	18.892	6.060	13.623	16.099	10.690	6.760	10.656	12.013	7.300	6.518
60	Princ. repay on short-term loans/cap.	10.058	87.808	.000	1.327	1.293	41.633	187.317	.000	.000	4.293	12.509	1.285	2.332
61	Long-term debt./cap.	103.058	108.904	162.910	176.041	57.052	94.727	62.517	164.432	129.445	75.977	90.468	79.836	125.660
62	Temp. loans outst./cap.	.420	1.849	.000	.000	.000	.104	.304	.000	.000	.000	.000	.863	2.645
63	Per pupil receipts fr. state sources	93.097	46.362	56.300	67.539	25.106	79.514	42.381	50.403	4.114	102.315	65.037	111.833	41.515
64	" " " " county "	58.085	42.733	12.120	36.918	19.758	59.997	29.778	19.592	10.363	44.028	48.208	73.256	47.100
65	" " " " local "	283.338	127.107	351.370	305.855	49.763	279.330	112.545	498.502	77.058	430.754	143.412	215.574	85.365
66	" " " " fed. "	7.803	6.155	3.100	3.236	2.118	5.690	2.620	2.177	1.750	7.908	4.199	11.071	6.994
67	" " " " local non-tax sources	2.962	2.820	.870	2.410	2.738	2.985	2.203	4.573	4.459	5.242	3.361	2.456	2.339
68	" " " " other sources	6.421	12.579	4.890	3.249	3.651	5.280	8.904	5.583	7.377	10.781	5.199	7.140	16.735
69	" " " " all "	451.652	107.179	428.640	419.206	35.994	433.009	92.234	580.833	92.979	601.030	121.056	421.111	86.405
70	Per cap. receipts from state sources	17.459	11.050	7.100	10.841	4.517	12.825	8.051	7.062	.553	20.051	14.915	22.710	10.378
71	" " " " local taxes	48.804	21.489	44.300	48.397	7.810	42.867	18.719	70.863	16.722	81.239	29.089	41.565	14.825
72	" " " " fed. sources	1.481	1.356	.390	.516	.352	.910	.496	.300	.230	1.475	.748	2.235	1.571
73	" " " " county sources	10.853	9.357	1.530	6.122	4.322	9.395	4.901	2.687	1.311	8.251	8.985	14.911	10.823
74	" " " " local non-tax sources	.516	.508	.110	.407	.523	.447	.317	.717	.794	1.027	.708	.450	.387
75	" " " " other sources	1.164	2.431	.620	.520	.565	.808	1.454	.772	.976	2.056	1.140	1.397	3.295
76	" " " " all sources	80.288	24.459	54.040	66.803	10.040	67.274	19.119	82.395	18.696	114.159	29.615	83.269	20.627
77	K-12 enrollment end of year	3853.010	117.045	101504.000	8511.313	3819.168	2011.136	624.500	5070.833	3107.759	2942.455	1149.306	1166.479	419.307
78	Total population, age 5-18	5863.288	6032.470	161108.000	12919.063	5258.531	3319.273	1186.113	8389.333	5635.673	4275.909	1698.650	1491.125	521.812
79	Total resident ADA	3202.010	8664.398	86794.000	7131.688	3370.516	1577.273	554.042	4330.833	2722.576	2459.364	1044.416	924.375	381.398
80	Total resident ADM	3388.490	9265.559	92910.000	7506.438	3565.823	1660.273	580.920	4595.167	2867.538	2605.091	1112.667	971.604	398.973

		ALL DISTRICTS		TYPE OF DISTRICT										
				LARGE CITY	MEDIUM CITIES		SMALL CITIES		EST. SUBURBS		DEV. SUBURBS		AG. SERV. CENTERS	
	VARIABLES	MEAN	STD. DEV.	MEAN	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.	MEAN	STD. DEV.
81	Total non-resident ADA	208.212	197.211	474.000	488.375	283.931	228.182	133.715	36.667	39.495	106.273	110.109	144.938	91.347
82	Total non-resident ADM	219.779	208.878	501.000	516.563	303.683	240.091	139.188	39.667	43.488	113.091	116.847	152.646	95.807
83	Total enrollment, K-6	2169.990	6351.244	63732.000	4799.500	2524.751	982.545	397.727	2916.833	1746.869	1785.273	765.274	550.000	227.593
84	Total enrollment, 7-12	1629.356	3558.083	35564.000	3577.500	1268.637	1007.682	262.283	2114.667	1337.724	1146.000	396.589	608.042	207.463
85	Ratio–pup. in highest decile to tested pop.	.114	.064	.075	.130	.050	.096	.037	.204	.116	.152	.075	.097	.049
86	" " " lowest " " " "	.088	.042	.070	.088	.033	.096	.043	.039	.032	.066	.037	.096	.041
87	Mean percentile of tested pop.	.520	.068	.400	.526	.052	.507	.050	.636	.100	.574	.071	.499	.049
88	Ratio–grads in 4-yr. coll. to H.S. grads.	.312	.121	.339	.390	.092	.272	.087	.500	.211	.333	.133	.275	.086
89	" " " county t.c." " "	.013	.021	.005	.005	.008	.014	.018	.001	.003	.008	.025	.018	.024
90	" " " nurs. sch." " "	.028	.021	.022	.031	.015	.025	.013	.012	.012	.023	.020	.031	.026
91	" " " bus. & voc. to H.S. grads.	.051	.046	.070	.034	.025	.050	.048	.027	.030	.043	.033	.061	.052
92	Ratio dropouts to grade 9-12 enrollment	.031	.015	.059	.031	.014	.029	.011	.024	.013	.026	.013	.033	.017
93	Ratio non-public to public school enr.	.530	.390	.570	.500	.200	.744	.380	.555	.140	.579	.330	.438	.430
94	Pupils/teacher, K-8	22.585	2.200	26.100	22.381	1.138	22.327	1.584	20.033	2.103	23.545	3.541	22.796	2.027
95	Pupils/teacher, 9-12	19.902	2.516	20.400	21.894	1.192	21.573	2.294	18.300	.957	16.900	2.855	19.350	1.883
96	Pupils/teacher, K-12	21.459	1.827	24.400	22.175	.776	22.009	1.518	19.450	1.516	21.218	2.751	21.212	1.699
97	Average class size, K-8	24.227	2.319	27.600	24.200	1.209	24.564	1.589	21.200	2.128	24.373	3.249	24.356	2.359
98	Average class size, 9-12	21.485	2.637	22.400	23.575	1.550	22.968	2.342	19.667	1.051	18.009	2.791	21.[illegible]12	2.007
99	Pupils/administrator, K-8	478.721	383.716	361.000	361.500	244.553	396.500	248.881	330.000	57.614	564.545	573.059	556.854	420.110
100	Pupils/administrator, 9-12	396.000	193.136	246.000	501.500	139.280	433.182	153.295	313.333	49.520	477.273	358.779	338.625	152.662
101	Pupils/spec. serv. person, K-12	90.422	21.589	116.000	97.387	11.397	91.518	16.620	83.700	9.858	104.527	26.118	84.673	23.597
102	Teachers/admin., K-12	16.803	6.771	12.300	16.038	7.994	16.182	7.238	15.733	3.177	16.973	3.609	17.531	6.949
103	% tchrs. less than 4 yrs. prep.	13.910	8.668	6.000	5.919	2.568	12.009	5.179	4.550	2.654	14.909	9.730	18.550	8.293
104	" " 4, but less than 5 yrs. prep.	62.068	9.139	47.300	61.237	5.239	64.864	6.708	50.333	13.976	58.018	7.583	63.767	9.022
105	Tchrs. 5 yrs. prep.	20.871	8.169	25.900	28.950	5.234	21.559	4.524	34.300	6.303	20.555	4.929	16.152	6.944
106	" over 5 yrs. prep.	3.307	5.084	20.800	3.738	3.605	1.773	3.137	10.817	11.547	6.545	4.237	1.821	2.682
107	% of elem. tchrs.–males	18.846	5.954	24.700	22.144	3.561	19.609	4.981	20.233	5.429	21.027	2.959	16.602	6.674
108	" " sec. " "	63.097	7.711	57.300	58.313	6.834	62.673	4.490	59.717	4.299	64.082	7.929	65.204	8.533
109	Med. yrs. local exper.–elem.	4.664	2.017	5.900	4.856	1.700	4.214	1.277	5.433	1.542	3.518	1.180	4.948	2.428
110	" " " " –sec.	4.833	2.663	7.900	7.356	1.733	5.355	2.256	9.267	3.344	2.436	1.293	3.683	1.646
111	" " total " –elem.	11.994	4.518	8.800	10.069	3.507	11.577	3.930	11.950	2.880	8.082	2.176	13.796	4.759
112	" " " " –sec.	8.915	4.261	10.700	12.281	3.555	10.291	3.699	14.800	5.236	6.409	1.936	6.965	3.207
113	Med. elem. tchr. salary	4803.356	505.863	5493.000	5160.938	192.485	4893.591	319.367	5769.000	501.242	4982.636	439.943	4466.646	355.003
114	Mean " " "	4846.452	513.903	5559.000	5285.000	119.240	4891.045	275.052	5780.000	386.142	5147.818	405.551	4479.229	369.137
115	Med. Jr. High tchr. salary	1550.596	2507.407	5309.000	5043.188	1933.580	1907.545	2530.297	2166.667	3075.124	.000	.000	422.833	1403.663
116	Mean " " " "	1550.125	2502.299	5759.000	5014.500	1907.236	1891.727	2506.401	2145.000	3037.670	.000	.000	431.958	1432.830
117	Med. Sr. High tchr. salary	5489.144	642.801	6389.000	6234.125	297.055	5497.773	463.118	6725.167	507.052	5561.182	399.196	5047.104	330.786
118	Mean " " " "	5463.135	522.728	6131.000	6034.813	278.007	5442.227	345.015	6545.167	409.373	5588.182	309.209	5104.333	267.860
119	Av. class size, hs English	26.346	2.294	26.500	27.594	1.319	27.164	1.860	25.033	1.027	25.155	1.842	25.990	2.614
120	" " " " Math	25.313	2.715	26.800	27.919	1.361	26.286	1.849	24.083	.720	25.164	2.203	24.156	2.887
121	" " " " Soc. Stud.	27.716	2.142	28.100	28.863	1.373	28.186	1.493	25.883	1.829	26.355	2.502	27.652	2.245
122	" " " " Science	25.657	2.333	27.600	27.837	1.299	26.768	1.581	26.067	1.558	24.700	2.069	24.548	2.261
123	" " " " For. Lang.	20.042	5.097	25.100	23.438	2.383	22.123	3.637	21.350	2.547	20.018	4.094	17.694	5.620
124	" " " " Fine Arts	14.849	9.063	23.000	22.363	2.986	16.505	7.591	19.333	2.661	18.609	3.142	9.994	9.730
125	" " " " Voc.	20.721	2.793	24.300	24.425	1.359	21.705	1.673	20.300	1.065	20.473	2.024	19.071	2.425
126	" " " " P. E.	34.313	10.024	36.900	39.838	8.823	37.814	9.202	37.867	8.201	29.136	4.730	31.556	10.401
127	% total h.s. enrollment in English	96.407	9.125	96.300	96.638	7.428	94.750	13.172	98.300	5.359	96.618	8.686	96.806	7.728
128	" " " " " Math	53.243	11.338	53.500	49.563	9.098	51.482	9.383	57.683	9.897	63.391	12.623	52.392	11.363
129	" " " " " Soc. Stud.	85.413	16.541	64.800	77.881	16.114	87.827	14.166	72.850	8.476	75.264	14.070	91.144	15.917
130	" " " " " Science	64.532	11.630	58.000	60.944	9.458	61.132	14.575	67.783	3.313	69.427	12.842	65.894	10.371
131	" " " " " For. Lang.	19.351	11.166	19.600	23.463	4.995	19.886	6.978	37.833	17.906	27.873	11.797	13.467	8.235
132	" " " " " Fine Arts	7.463	5.952	13.200	9.706	4.361	6.845	4.320	13.950	5.742	14.309	5.371	4.500	4.879
133	" " " " " Voc.	103.879	23.760	134.400	98.188	13.218	114.864	23.740	83.933	37.367	87.245	22.540	106.410	20.263
134	" " " " " P. E.	86.302	19.840	75.800	87.225	16.082	83.550	19.114	97.100	7.607	94.845	7.839	84.167	23.151
135	Expend./pupil, elem.	326.125	66.342	362.000	348.438	44.658	319.909	29.785	454.000	68.748	371.727	81.752	294.354	51.008
136	" " sec.	447.875	103.561	459.000	411.563	40.192	400.500	53.913	573.500	80.378	617.273	153.605	426.938	68.514
137	" " library, elem.	2.298	1.595	2.840	2.316	1.861	1.975	1.311	2.593	.913	3.977	2.772	2.007	.952
138	" " " sec.	3.572	2.915	2.410	2.737	1.628	2.711	.837	2.647	.470	8.065	6.660	3.354	1.278
139	" " spec. ed. (ortho.)	149.317	438.391	662.000	876.813	744.347	.000	.000	139.667	312.304	.000	.000	.000	.000
140	" " " " (train.)	110.548	196.909	408.000	364.563	171.748	92.136	179.272	205.167	305.478	58.727	124.652	28.167	110.420
141	" " " " (educ.)	296.683	200.432	362.000	370.563	121.686	332.773	179.040	429.000	218.307	328.000	273.481	230.438	187.109
142	" " " " (vis. hand.)	63.087	229.257	423.000	383.625	457.328	.000	.000	.000	.000	.000	.000	.000	.000
143	" " " " (hear. hand.)	117.423	331.584	1111.000	547.438	490.106	69.409	318.072	135.833	303.733	.000	.000	.000	.000
144	" " " " (speech)	12.217	18.020	19.800	30.169	9.185	12.714	16.944	28.633	18.994	.000	.000	6.596	17.044
145	Expend./pupil transp.	72.563	33.425	72.000	67.013	31.158	73.932	26.253	77.250	94.226	50.982	15.406	78.156	21.566
146	Expend. transp./pupil in ADM	18.614	13.269	3.360	5.633	4.461	13.600	8.981	4.233	4.246	26.484	10.434	25.550	12.247
147	Exp. for health & rec./pupil in ADM	3.473	5.142	17.810	4.159	3.632	2.980	5.476	14.348	8.662	3.480	3.636	1.810	2.151
148	" " school lunch " " "	17.590	9.957	13.840	7.693	5.429	13.328	6.627	10.972	8.148	26.849	12.338	21.625	7.680
149	Av. cost per meal served	.313	.113	.389	.323	.137	.317	.102	.289	.226	.383	.050	.294	.090
150	Exp./pup. in ADM for long-term debt	53.569	36.128	47.500	53.219	20.876	49.186	26.162	71.883	36.332	118.827	47.930	38.577	20.625
151	Exp./capita for public libraries	2.090	.898	3.100	2.544	.655	2.614	.608	2.933	.863	.727	.558	1.885	.707
152	% pop. 21 over vot. in 1960 Pres. elec.	77.412	6.531	66.100	73.394	2.855	75.655	6.916	77.150	7.253	79.845	5.740	79.269	6.274
153	" " " " " " gub. "	77.110	6.277	66.300	73.563	2.242	75.459	6.838	77.317	6.919	79.818	6.050	78.627	6.001
154	% 1960 pop. living elsewhere in 1955	45.481	8.044	52.700	48.200	5.163	42.377	4.631	44.833	4.838	60.645	7.564	42.452	5.964
155	" " " " " in U. S. 1955	44.089	7.724	49.400	46.338	4.371	41.241	4.525	43.050	4.434	59.036	7.553	41.240	5.703
156	" " " " abroad in 1955	.517	.396	1.300	.806	.453	.486	.255	.850	.369	.664	.412	.344	.310
157	" " " moved, res. not rptd.	.819	.583	2.000	1.019	.569	.668	.269	.917	.273	.964	.483	.752	.685
158	" " " in diff. county or SMSA	14.765	8.017	10.900	14.650	5.218	14.114	6.034	10.267	1.779	23.245	16.774	13.802	5.308
159	" " " in diff. state in 1955	4.989	2.398	6.500	6.413	2.781	4.455	1.557	6.317	2.204	5.445	2.511	4.458	2.305
160	Ratio of ADM to gross enrollment	.952	.018	.926	.946	.012	.957	.012	.934	.022	.945	.012	.957	.019
161	Mean teacher's salary, K-12	5117.096	476.472	5728.000	5564.563	144.348	5157.273	295.070	6057.833	350.543	5307.455	332.195	4775.583	305.897

APPENDIX C

STATE DISTRIBUTION SUMMARIES

New Jersey

Name and use of distribution	State Aid, 1962-63 Amount	Percent	Bases of distribution
Estimated School Grants (Total)	$104,564,937	100.0	
1. Minimum Aid Fund (current expense, grades K-12)	55,321,090	53.0	Resident pupils in average daily membership
2. Equalization Aid Fund (current expense, grades K-12)	18,510,250	17.7	Foundation program based on a specidied amount per pupil, minus local share
3. School Building Aid Fund	15,939,270	15.2	Capital foundation program minus local share
4. Transportation Fund	8,810,142	8.4	Percent of approved cost
5. Atypical Pupils Fund	3,248,418	3.1	Amount per district excess cost of tuition, and half the cost of individual instruction
6. Helping Teachers, County Attendance Officers and County Supervisors of Child Study Fund	670,398	.6	State pays salaries
7. School Building Capital Reserve Fund	569,692	.5	Capital foundation program amount minus local share
8. Emotional Health Education Act Fund	549,876	.5	Approved cost to maximum
9. Vocational Evening School Fund	321,427	.3	Dollar-for- dollar matching to maximum
10. Salaries of County Superintendent's Fund	276,454	.3	State pays salaries
11. Emergency Aid to Needy Districts Fund	175,000	.2	Amount needed
12. Special State Aid Fund	101,920	.1	State board rules
13. Industrial School Fund	71,000		Dollar-for-dollar matching to maximum

Oregon

Name and use of distribution	State Aid, 1962-63[a]		Bases of distribution
	Amount	Percent	
Estimated School Grants (Total)	$68,130,267	100.0	
1. Basic School Support Fund--Average Daily Membership Portion (nonrestricted use, grades 1-12)	44,958,202	66.0	Weighted average daily membership (ADM)
2. Basic School Support Fund--Foundation Program Portion (nonrestricted use, grades 1-12)	11,239,550	16.5	Foundation amount per weighted pupil minus local contribution
3. Basic School Support Fund--Transportation Portion (grades 1-12)	4,425,000	6.5	Number of pupil miles and net cost of transportation to 60 percent of cost
4. Basic School Support Fund--Growth Portion (nonrestricted use, grades 1-12)	1,600,000	2.3	Increase in weighted ADM
5. Basic School Support Fund--Handicapped Children Portion	1,087,000	1.6	Cost above average per pupil cost up to 1.5 times per capita cost
6. Education Center and Community College Support Fund	1,019,444	1.5	Two-thirds of cost based on average per pupil expenditure
7. Basic School Support Fund--Mentally Retarded Children Portion	952,000	1.4	Allowable cost to maximum
8. Community College and Education Center Construction Fund (grades 13-14)	850,000	1.2	Percent of building cost
9. Common School Fund (nonrestricted use, grades 1-8)	595,853	.9	School census, ages 4-20, inclusive
10. Educational Improvement Fund (excludes portion to higher education institutions)	370,706	.5	Project cost
11. Basic School Support Fund--Emergency Account and Children from State Tax-Exempt Property Portion	320,000	.5	Approved need and local per-pupil expenditure

Oregon (continued)

Name and use of distribution	State Aid, 1962-63[a] Amount	Percent	Bases of distribution
12. Basic School Support Fund--Educationally Advanced Children and Educationally Able and Gifted Children Portion	250,360	.4	Amount per child to maximum for pupil participants
13. Student Driver Training Fund	215,000	.3	Seventy-five percent of cost to maximum
14. Vocational Education Fund	127,002	.2	Approved application
15. Basic School Support Fund--Curriculum Improvement Program Portion	62,650	.1	Amount per pupil for approved plan
16. Migrant Children's Education Account	57,500	.1	Cost to maximum based on proportion of student body considered migrants

[a]Data provided prior to close of school year

The Basic Support Fund for fiscal year beginning July 1, 1963, is calculated by multiplying $143 by number of school children between the ages of 5 and 17 included in the last census. In the fiscal year beginning July 1, 1964, the amount is calculated by multiplying $152 by the number of school-age children between the ages of 4 and 16 included in the last census.

The following items are provided, in addition to other appropriations, for the biennium beginning July 1, 1963:

Handicapped Children Programs	$2,674,000
Mentally Retarded Children Programs	2,504,000
Educationally Able and Gifted Children Programs	500,000
Curriculum Improvement Program	136,000
Migrant Children Summer School Programs	50,000
	$5,864,000

Tennessee

Name and use of distribution	State Aid, 1962-63		Bases of distribution
	Amount	Percent	
Estimated School Grants (Total)	$117,902,960	100.0	
1. Minimum School Program	102,205,000	86.7	According to relative taxpaying ability, for salaries, supplies, special education & transportation
2. In-service Training	65,000	.1	Reimbursement for attendance and expenses
3. Sick Leave	345,000	.3	Payment based on absence of regular teacher due to illness
4. Capital Outlay	8,775,000	7.4	Per pupil basis, based on relative taxpaying ability
5. Textbooks	2,455,850	2.1	Per student ($3.00 regular student, $800 for increased number from previous year)
6. Vocational Education	1,480,000	1.3	Supplement to regular salary schedule plus, summer class, etc.
7. Vocational Rehabilitation	615,000	.5	Supplement to federal and local funds
8. Special School	1,962,110	1.7	Payment of full cost

Wisconsin

Name and use of distribution	State Aid, 1962-63 Amount	 Percent	Bases of distribution
Estimated School Grants (Total)	$84,474,134	100.0	
1. Elementary and High School Aid Appropriation--Equalizing Portion (current expense, grades K-12)	38,500,000	45.6	Foundation program minus local contribution based on a guaranteed property valuation per pupil and the local tax rate
2. Elementary and High School Aid Appropriation--Flat-Grant Portion (current expense, grades K-12)	31,500,000	37.3	Amount per pupil in average daily membership (ADM)
3. Transportation Fund--Flat-Grant Portion	6,400,000	7.6	Pupils transported and distance traveled
4. Education of Handicapped Children Fund	4,675,000	5.5	Portion of program cost
5. Vocational and Adult Education Fund	1,785,000	2.1	Amount per student period and expenditures for supervision
6. Driver Education Fund	669,134	.8	Amount per pupil instructed
7. Common School Fund	648,000	.8	School census, 4-20 years of age, inclusive
8. Tuition Fund	292,000	.3	Cost of tuition
9. Transportation Fund--Equalizing Portion	5,000		Excess of transportation cost over amount from 2-mill levy and transportation apportionment
School Loans (Total)	$1,189,000	...	
1. State Loan Fund	1,189,000	...	Approved application and funds available for loan

APPENDIX D

HYPOTHETICAL MODEL APPLIED TO SIX DISTRICTS

The three principal elements required for application of the hypothetical state support model are fiscal capacity of the district (FC_D), service responsibility of the district (SR_D) and the priced program of the district (PP_D) as defined in Chapter IX. Fiscal capacity as applied in the study utilized three measures. These data are shown for the latest year available in the table below for the six districts studied.

School District	Net Personal Income Tax Paid, 1963 % of state total	Effective Buying Income, 1962 % of state total	Equalized Valuation of Property, 1962 % of state total
Milwaukee	19.094	21.184	20.452
Appleton	1.899	1.553	1.678
Merrill	0.228	0.373	0.315
Cudahy	0.485	0.559	0.712
Preble	0.285	0.373	0.393
Richland Center	0.124	0.179	0.216

The total amount in each source for the state is:

Source	State Total
Net Personal Income Tax Paid	$ 182,595,925
Effective Buying Income	8,065,332,000
Equalized Valuation of Property	18,844,251,120

The state total net personal income tax paid is a preliminary figure provided by the Wisconsin Department of Taxation. The method of determining the net personal income tax paid, effective buying income, and equalized valuation of property in each district appears in the text.

The calculated service responsibility of each district and the percents of state total are:

School District	Service Responsibility	Percent of State Total
Milwaukee	$135,317,537	21.558
Appleton	6,487,736	1.034
Merrill	1,879,157	0.299
Cudahy	3,730,745	0.594
Preble	1,868,644	0.298
Richland Center	1,510,307	0.241
State Total	627,692,929	100.000

The priced program (described in Chapter IX) for the six districts is as follows:

School District	Priced Program
Milwaukee	$197,596,050
Appleton	12,319,130
Merrill	4,349,769
Cudahy	5,172,100
Preble	4,328,855
Richland Center	2,888,199

Applying the measures presented to the formula $\left(1 - \frac{FC_D}{SR_D}\right) \text{ X } PP_D =$ state support, the following calculations resulted when net personal income tax paid was used as the measure of fiscal capacity:

Milwaukee

$$\left(1 - \frac{19.094}{21.558}\right) \text{ X } \$197{,}596{,}050 = \$22{,}525{,}949.70 \text{ state support}$$

Appleton

$$\left(1 - \frac{1.899}{1.034}\right) \text{ X } \$12{,}319{,}130 = \text{excess base}$$

Merrill

$$\left(1 - \frac{0.228}{0.299}\right) \text{ X } \$4{,}349{,}769 = \$1{,}030{,}895.25 \text{ state support}$$

Cudahy

$$\left(1 - \frac{0.485}{0.594}\right) \text{ X } \$5{,}172{,}100 = \$951{,}666.40 \text{ state support}$$

Preble

$$\left(1 - \frac{0.285}{0.298}\right) \text{ X } \$4{,}328{,}855 = \$190{,}469.62 \text{ state support}$$

Richland Center

$$\left(1 - \frac{0.124}{0.241}\right) \text{ X } \$2{,}888{,}199 = \$1{,}400{,}776.52 \text{ state support}$$

Calculations using effective buying income as the measure of fiscal capacity:

Milwaukee

$$\left(1 - \frac{21.184}{21.558}\right) \text{ X } \$197{,}596{,}050 = \$3{,}359{,}132.85 \text{ state support}$$

Appleton

$$\left(1 - \frac{1.553}{1.034}\right) \text{ X } \$12{,}319{,}130 = \text{excess base}$$

Merrill

$$\left(1 - \frac{0.373}{0.299}\right) \text{ X } \$4,349,769 = \text{excess base}$$

Cudahy

$$\left(1 - \frac{0.483}{0.594}\right) \text{ X } \$5,172,100 = \$967,182.70 \text{ state support}$$

Preble

$$\left(1 - \frac{0.373}{0.298}\right) \text{ X } \$4,328,855 = \text{excess base}$$

Richland Center

$$\left(1 - \frac{0.179}{0.241}\right) \text{ X } \$2,888,199 = \$742,267.14 \text{ state support}$$

Calculations using equalized valuation of property as the measure of fiscal capacity:

Milwaukee

$$\left(1 - \frac{20.452}{21.558}\right) \text{ X } \$197,596,050 = \$10,077,389.55 \text{ state support}$$

Appleton

$$\left(1 - \frac{1.678}{1.034}\right) \text{ X } \$12,319,130 = \text{excess base}$$

Merrill

$$\left(1 - \frac{0.315}{0.299}\right) \text{ X } \$4,349,769 = \text{excess base}$$

Cudahy

$$\left(1 - \frac{0.712}{0.594}\right) \text{ X } \$5,172,100 = \text{excess base}$$

Preble

$$\left(1 - \frac{0.393}{0.298}\right) \text{ X } \$4,328,855 = \text{excess base}$$

Richland Center

$$\left(1 - \frac{0.216}{0.241}\right) \text{ X } \$2,888,199 = \$300,372.70 \text{ state support}$$

Whenever the fiscal capacity of a district is greater than the service responsibility, the district would incur an obligation to the state equalization fund. To calculate the obligation of such districts, an average state rate required on excess fiscal capacity (ASR_E) must be calculated. This is done by use of the formula $ASR_E = \frac{EMR_S}{EFC_S}$. It may be noted that for purpose of illustration, the amount of state support and amount of payment to the state equalization fund balance in the six districts.

This develops from the assumption that these districts are representative of the state as a whole; an assumption which may not be correct. If all districts in the state were included in the calculations, state support payments and state equalization payments would balance for all districts (not necessarily for the six districts included in the study).

Applying the formula would produce the following rates:

net personal income tax paid --$ASR_E = 16.50650$

effective buying income --$ASR_E = .09411$

equalized valuation of property --$ASR_E = .06375$

The obligation of each district having excess capacity is determined by the formula: Obligation = $\frac{EFC_D}{FC_D} \times \$FC_D \times ASR_E$. The calculated obligation of those districts with excess capacity using (a) net personal income tax paid, (b) effective buying income, and (c) equalized valuation of property as the measures of fiscal capacity are shown below:

(In the examples, a. designates net personal income tax paid, b. effective buying income, and c. equalized valuation of property.

Appleton

a. $\left(\frac{0.865}{1.889}\right) \times \$3,467,501 \times 16.50650 = \$26,099,747.67$

b. $\left(\frac{0.519}{1.553}\right) \times \$125,291,397 \times .09411 = \$3,938,251.94$

c. $\left(\frac{0.644}{1.678}\right) \times \$316,266,900 \times .06375 = \$7,742,213.67$

Merrill

b. $\left(\frac{0.074}{0.373}\right) \times \$30,083,233 \times .09411 = \$560,564.33$

c. $\left(\frac{0.016}{0.315}\right) \times \$59,401,075 \times .06375 = \$193,127.76$

Cudahy

c. $\left(\frac{0.118}{0.712}\right) \times \$134,201,600 \times .06375 = \$1,420,188.46$

Preble

b. $\left(\frac{0.075}{0.373}\right) \times \$30,118,180 \times .09411 = \$569,718.79$

c. $\left(\frac{0.085}{0.383}\right) \times \$72,198,800 \times .06375 = \$1,021,793.54$

ERRATA

Page	Paragraph	Line	
x		46	'Program' not 'Porgram'
xii		29	Should read: 'Summary Table: Impact of . . .'
xiv		50	'272' not '273'
6	4	13	'public' not 'pupilic'
7	3	4	'cities' not 'city'
7	3	12	'satellite' not 'staellite'
10	1	21	'three' not 'two'
13	2	21	'SA95' not 'SA'
16	3	3	'Corporate Income Tax Division' not 'corporate income tax division'
18	4	2	'Wherever appropriate,' not 'Wherever, appropriate,'
27	2	1	'treatments' not 'treatment'
43	6	5	Title of Table 3.6 should read: 'Percentage of Family Personal Income Paid in Taxes'
45		45	'Washington, D. C.,' not 'Washington D. C.,'
50	4	4	'outlay' not 'outaly'
58	1	11	'those' not 'these'
70		3	'Washington, D. C.:' not 'Washington, D. C.,'
73		30	'Ithaca' not 'Ithica'
74		21	'1961,' not '196 ,'
81	1	7	'$4.6 billion' not '4.6 billion'
81	3	1	'An' not 'As'
85	4	2	'purpose' not 'purposes'
87		1	'PER-CAPITA' not 'PER CAPITA'
93	1	15	Should read: 'from 22.0 in 1943 to 22.1 percent in 1944.'
95	1	1	'support' not 'suppor'
110	2	10	'$r < .80$' not '$r > .80$'
123		1	Should read: '. . . $\geq \pm .70$ . . .'
127	3	5	'nature' not 'nautre'
131	2	1	'Factor I-1.' not 'Factor I-1.'
142	2	13	'foreign' not 'forein'
145	2	9	Delete second 'population'
149	1	14	'districts' not 'district'
155	2	3	'physical' not 'physcial'
155	4	3	Insert 'total' after 'percent of the'
158	4	2	'$r \geq \pm .40$' not '$r = \pm .40$'
158	5	6	'A-3:' not 'AA-3:'
168	3	1	'Factor P-3.' not 'Factor P-3.'
169	2	31	'districts' not 'district'
170	3	1	'Factor E-3.' not 'Factor E-3.'
171	1	12	'pupils' not 'puplls'
173	3	9	'resembles' not 'resembees'
175	3	9	'decile' not 'declie'
178	2	8	'variables' not 'variable'
179	1	3	'equalized' not 'equlized'
180	4	2	'variable' not 'variables'
181	9	7	'educational' not 'edcucational'

190	4	3-4	Delete periods after '(Wisconsin)' and 'organization'
199	4	6-8	Delete periods after 'population' and 'children'
202	5	6	'Great Lakes' not 'Great Lake'
203	3	11	Insert 'is' after 'county superintendent'
208	1	5	'taken' not 'takne'
208	4	2	'for' not 'fro'
219		22	'Washington, D. C.,' not 'Washington D. C.,'
221	1	17	'Knox County' not 'Know County'
229	1	15	'some' not 's me'
230	1	32	'yields' not 'yeilds'
233		5	'School' not 'SSchool'
241	4	4	'is' not 'are'
251	2	4	'participating' not 'participaing'
252	2	4	'activity' not 'acticity'
257	2	6	'prosperity' not 'property'
258	7	4	'Fifty-two' not 'Fifty-nine'
265	4	15	'district' not 'districts'
266	2	15	Insert '=' between $1,000,000 and $250,000
281		3	'Teachers'' not 'Teachers'